ABSTRACT

Title of Dissertation:	A SURVEY OF WORKS FOR HORN AND FIXED MEDIA FROM 1968 TO 2016
	Erika Binsley Loke, Doctor of Musical Arts in Horn Performance, 2017
Dissertation directed by:	Professor of Horn Gregory Miller, School of Music, Wind & Percussion Division

The purpose of this study is to investigate works written for horn and fixed media "tape" accompaniment. Since the late 1960s many pieces have been written for this instrumentation, but none of these are widely considered standard solo repertoire for the horn. The author's intention is that this document will raise awareness about this unique medium. Works were obtained through the WorldCat Library, publishers, and directly from their composers. The pieces that the author obtained are analyzed and summarized in individual entries.

A SURVEY OF WORKS FOR HORN AND FIXED MEDIA FROM 1968 TO 2016

by

Erika Binsley Loke

Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
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Advisory Committee:
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Acknowledgements

I would like to thank all of the composers whom I contacted for sharing information about their works and in many cases, generously sending scores and supporting media without charge. To all of the composers whose works are included in this document, thank you for your contributions to the horn's solo repertoire!

Although we have never met, I would like to thank Matthew James for his Googledoc of modern solo horn literature. This document led me to a number of pieces that are unpublished and therefore could not have been found through WorldCat or in many cases, even a web search.

Thank you to my committee for all of your efforts in making this project a success. To my committee chair, Professor Gregory Miller, I would like to give a special thanks. Your effective pedagogical methods helped me accomplish my performance goals and your support of my non-traditional scholarly interests allowed me to be academically productive with topics I am passionate about. I could not have asked for a better mentor during the last three years!

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Chapter 1: Overview of the Survey

Background

The earliest experiments in electronic music occurred at about the time that the horn reached its modern form–around the beginning of the twentieth century. This statement speaks to both the historic nature of the horn and the newness of electronic music.

The overall medium of electronic music is divided into two categories: acousmatic and live electronic.[1] Both rely on speakers to produce sounds, but acousmatic music does not change with each performance because its data is stored in an analog or digital format (e.g., tape or mp3 file). Live electronics alter the acoustic sounds of a live performer or create synthesized sounds in response to a command (e.g., pressing a key). Acousmatic sounds can originate through either acoustic or synthesized means, and frequently include a combination of both categories. For instance, Howard Buss' *Alien Loop de Loops* includes both synthesized "laser" sounds and recordings of airplanes.

For the purpose of this study, only pieces with acousmatic accompaniment are investigated. In the early 1950s, composers began writing works for monophonic acoustic instruments and tape accompaniment. The first known piece for acoustic instrument and

[1]Simon Emmerson and Dennis Smalley, "Electro-acoustic music," Grove Music Online, ed. Deane Root, accessed August 28, 2017, http://www.oxfordmusiconline.com.

electronic media is Henk Badings's *Capriccio for Violin and Two Sound Tracks*, which was written in 1952.[2] Thus, pieces for horn and acousmatic accompaniment are unlikely to have existed prior to this time. As far as can be ascertained, John Rimmer's 1968 *Composition 1* was the first work written for horn and fixed media.

Pieces written for horn and acousmatic accompaniment are frequently referred to as pieces for "horn and tape" by their composers regardless of the actual format of the accompaniment. Other terms used to describe accompaniment of this kind include: electronics, synthesizer, pre-recorded soundscape, and fixed media. The author believes that the best term is "fixed media" because it includes multiple formats and has less ambiguity than "electronics."

Issue

Many pieces have been written for the medium of horn and fixed media accompaniment. However, no resources currently exist outlining pieces written for this instrumentation. None of these works are currently regarded as "standard" literature, and as a result, performers are only aware of their existence through haphazard means, such as word of mouth.

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[2] Bassingthwaighte, Sarah, "Electroacoustic Music for the Flute" (DMA diss., University of Washington, 2002), http://www.subliminal.org/flute/dissertation/ch02.html.

Methodology

The scope of the investigation included pieces specifically composed for horn and acousmatic accompaniment. Arrangements made by someone other than the original composer (e.g., "play-along" accompaniments like Music Minus One and Smart Music) are excluded, as are pieces that include any form of live electronics, such as amplification or looping, and works that call for the performers to record their own tapes. Also excluded from the investigation are pieces that include any additional performers beyond a solo hornist.

A list of pieces was compiled from catalogs of major publishers, the WorldCat library system, and web searches. From that list, 39 pieces were obtained and analyzed. Any missing pieces for this medium, if any exist, were left out because they are unpublished or not held by libraries. Pieces that were unobtainable in part (i.e. missing fixed media) are compiled in the appendix, with the composer's name, title, and publisher.

Format for each entry includes the following:

title

composer (with dates and nationality, if available)

publisher

dates

format of horn part

duration (to the nearest 30 seconds)

subjective difficulty level

extended techniques

range of horn part

a representative example of each movement's composition style

notes

"Format of horn part" refers to whether the music is written as a part or a score and the type of notation used. Notation types include metered, unmetered (but may have measures), chronometric (time grid in seconds above or below horn line, rather than a tempo marking), or a combination. Difficulty (appropriate ability level for the work) was assessed on a subjective five-point scale, based on range, rhythmic complexity, and extended techniques:

I. Beginning student

II. Talented high school student

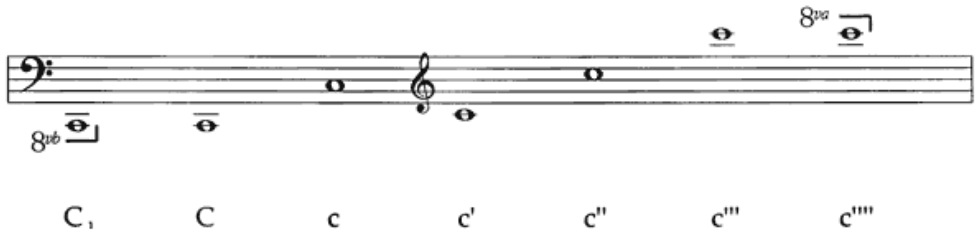
III. Undergraduate performance major

IV. Graduate performance major

V. Virtuoso

The analysis is written from a performer's viewpoint and notes information such as known background (e.g., extramusical associations, commission information, performance history, reception, etc.), performance challenges, stylistic traits, and other pertinent details.

Musical notes are described in written horn pitch (key of F), unless specified otherwise, and octaves are described in accordance with the International Horn Society's guidelines for its journal, *The Horn Call*[3]:



[3] "Author Guidelines," International Horn Society, accessed August 28, 2017, https://www.hornsociety.org/publications/horn-call/author-guidelines.

Chapter 2: Survey of Individual Works

Title: *Dance Fool, Dance!*

Composer: Paul Basler (b. 1963), United States

Publisher: RM Williams Publishing

Dates: Written 1998

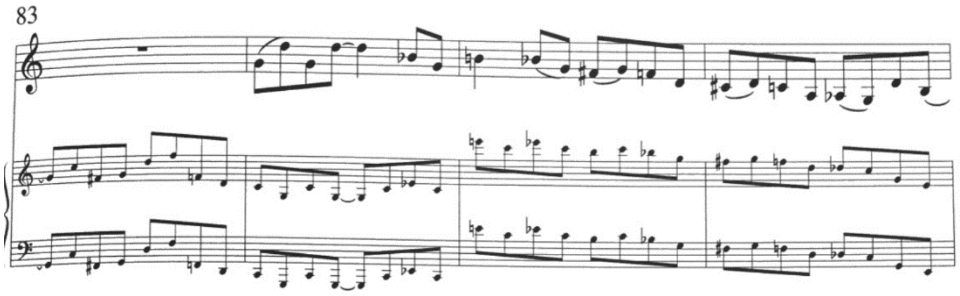
Format of Horn Part: measured score and part

Duration: 5'

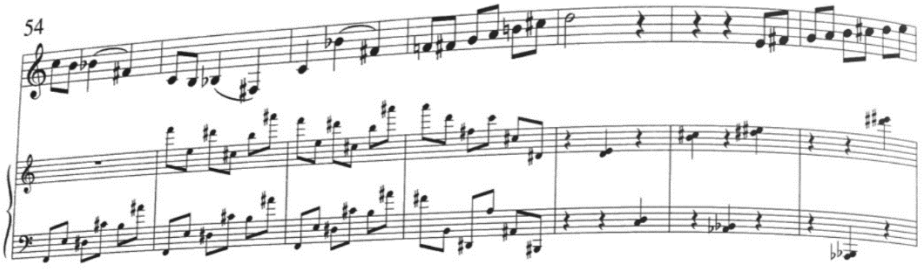
Difficulty Level: IV Graduate Performance Major

Extended Techniques: flutter tongue, glissando

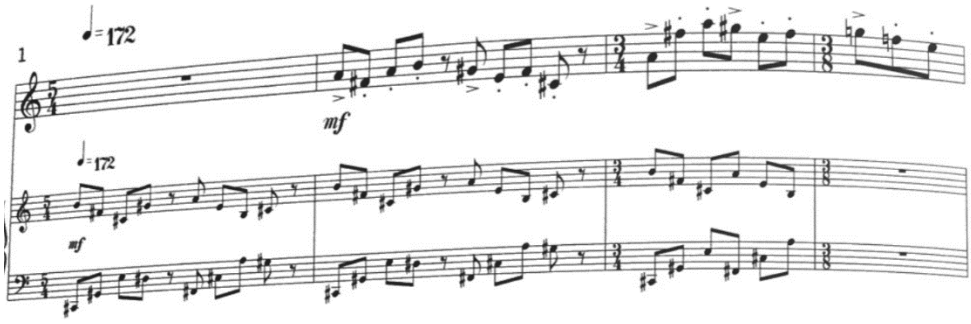
Range: f#-a"



Example 1: mov. 1, mm 83-86, frequent eighth notes



Example 2: mov. 2, mm 54-60, independence of lines



Example 3: mov. 3, mm 1-4, syncopated accents

Notes: *Dance Fool, Dance!* was written for horn soloist Thomas Bacon. Contrary to what the title might suggest, the accompaniment is pre-recorded sound, rather than a part for a pianist to play on a synthesizer. The published copy of the piece includes both a part with cues and a score with two staves for the accompaniment.

The accompaniment is overall whimsical and not particularly tonal. Each movement has an approximate tonic note but uses all twelve tones.

Fixed media sounds include synthesized pizzicato, flute, harpsichord, piano, xylophone, along with purely electronic sounds. All three movements are composed with similar harmonies and contain recurring motives, but outside of these commonalities, the movements do not directly relate to one another.

The most significant performance challenges that arise from this piece are the incredibly quick tempi and syncopated rhythms. In addition, the pseudo twelve tone melodies present potentially unfamiliar patterns. However, this piece is easier to play since it does not explore the horn's extreme ranges.

The first movement, Bump, presents the unique challenge in that the horn line does not directly relate to the accompaniment. This movement is played in 2/2 at half note = 112, and while the second movement technically has the faster quarter note tempo, functionally Bump has the fastest tempo of the three movements due to the heavy use of 8th notes (example 1). The syncopations are irregular, which makes the beat difficult to internalize. The most common syncopation occurs as a tie between the fourth and fifth 8th notes of countless measures.

Spin, the second movement, has a subtle relationship to the accompaniment. The horn's motives are heard only in the accompaniment while the horn is playing (example 2), and they are quite soft, so they are difficult for the player to hear. It is a waltz that is best felt in one. During this movement, the hornist is asked to play angular glissandi that imitate the fixed media.

Grind, the third movement, is the most accessible to play, in part because the horn line can be clearly heard in relation to the fixed media. Interestingly, this is the only movement to have specific articulation markings other than slurs, but it is also the only one to not make use of extended techniques. The accents on syncopated beats give it more of a character of popular music (example 3). This movement changes meters every three measures or less, which creates a slightly chaotic aesthetic.

Title: *Intermix*

Composer: David Berlin (b. 1943), United States

Publisher: unpublished

Dates: written 1980, premiered 1981

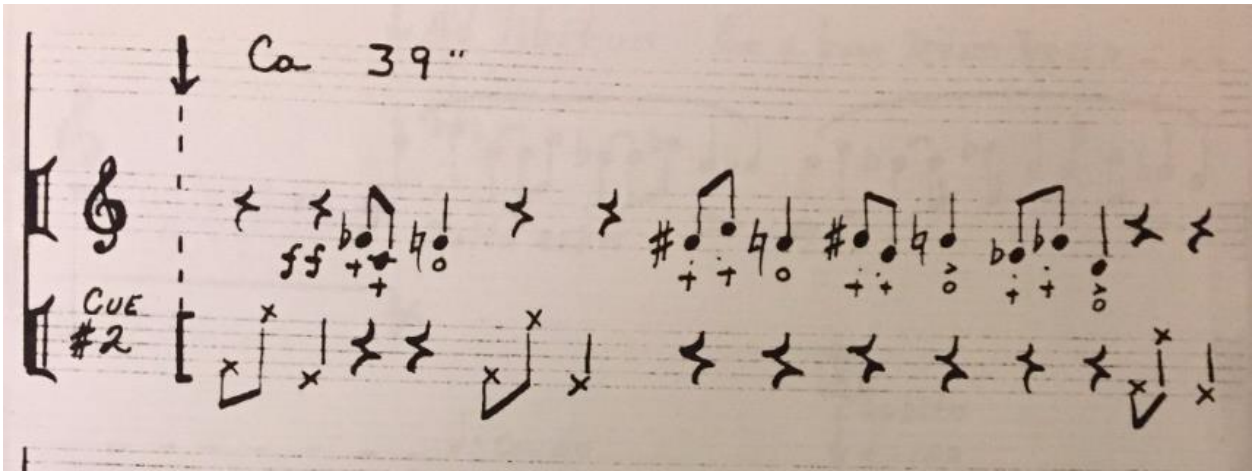
Format of Horn Part: unmeasured score

Duration: 8'

Difficulty Level: III Undergraduate performance major

Extended Techniques: Staging, mute, stopped horn

Range: G-ab"



Example 4: page 3, dialogue with fixed media

Notes: While pursuing a DMA in composition, Berlin wrote this piece for hornist Jack Scandrett. Berlin wrote in an email, “The audio cues were created with my Moog Sonic 6 synthesizer and me playing my Alexander. Someone playing this piece today would be playing a duet with me over a span of 37 years since fixed media freezes a point

in time."[4] The work was premiered by Scandrett and the Pittsburgh New Music Ensemble.

At the beginning of the work, the hornist is off-stage. In the premiere performance, the soloist was in a balcony. The horn's first call is unaccompanied. Crescendi and decrescendi indicate the phrasing in the absence of meter. Atonal harmony is apparent on the b' that follows slowly alternating b$^{\flat}$"s and g"s. These three first notes also demonstrate the recurring pitch class set [0,4,5], which appears later in various permutations. After several phrases, a fixed media operator turns on the cue #1 while the hornist walks onto the stage during the span of 87 seconds. The fixed media contains a mixture of recorded horn and synthesized long tones in the style of the opening solo, though waves of varying speeds are a prominent feature in these notes. As the fixed media's interlude progresses, more atonal, active synthesized lines are added on top of the long tones until the passage fades away for the horn's second and much longer unaccompanied solo.

This second solo begins in a similar style to the initial one, with relatively slow moving notes and [0,4,5] pitch content. At the top of the second page, the mute is used for a [0,4,5] pattern, and when the mute comes out, the harmony is quartal for a brief phrase. Following a descent to B, the horn begins a gradual accelerando on an active 8th note line until reaching quarter note = 120. At this moment, the fixed media re-enters for

[4] David Berlin, email to author, March 30, 2017.

a quirky, imitative dialogue with the horn (example 4). This passage involves frequent [0,4,5] patterns in both the squeaky synthesized sounds and the horn line. The horn plays a mixture of stopped and open notes until the grand pause at the top of page four. Following the pause, the hornist plays slurred phrases in the previous style and then starts a new section that is evocative of Cue #2, but it consists of mostly two 8th-note groupings. The fixed media of Cue #3 underscores the growing tension in the horn line with electronic rocket-like noises.

After a short muted phrase in the horn, Cue #4 plays delicate, dissonant electronic flutters while the horn plays a line that descends into the lowest range of the instrument. While the low chords and quiet flourishes continue, the hornist walks offstage to play the final, unaccompanied solo. This solemn line is reminiscent of the other unaccompanied solos, and it ends with the interval that began the work: b♭' to g'.

Title: *Half Moon at Checkerboard Mesa: Fantasy for Horn, Frogs, Crickets, and Coyotes*

Composer: Phillip Kent Bimstein (b. 1947), United States

Publisher: Franklin Stark Music (ASCAP)

Dates: written 1997, premiered 1998

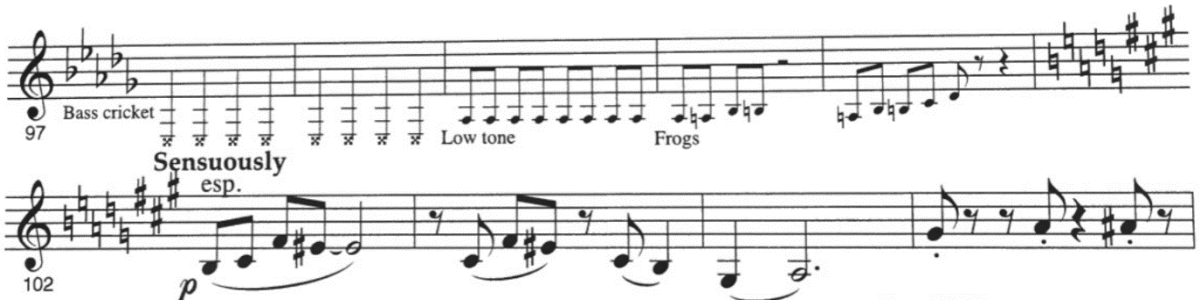
Format of Horn Part: part with cues

Duration: 8'30"

Difficulty Level: III Undergraduate performance major

Range: $g^{\flat}$-c#'''

Extended Techniques: none



Example 5: mm 97-105, key change at mm 102

Notes: Phillip Bimstein is described on his website as being an "all-natural politician-composer,"[5] and he served as a mayor in Utah with an environmental agenda. His passion for nature shows up in the work's primary accompaniment sounds: sampled

[5]Phillip Bimstein, "Phillip Bimstein: Biography," accessed April 2, 2017, http://www.bimstein.com/html/bio.html.

frogs, crickets, “bass crickets”, water sounds, and coyotes. These “instruments” are used rhythmically, in contrast to other works, such as Doug Hill’s *Thoughtful Wanderings,* which use nature sounds as an atmospheric effect exclusively. Other sounds in the fixed media include vibraphone, woodblock, oboe, mellow drum sounds, synthesized pitches, and “earth moving.” Like many other pieces for horn and fixed media, this one is also published for other instruments, which include oboe, clarinet, trombone, and violin, with the oboe version being the original.

At the beginning, twenty seconds of different frog noises are heard as an introduction before the percussion and rhythmic frog croaks establish the meter. At measure 10, the horn plays the first theme, marked “with sweet innocence.” This initial melodic material stays within a comfortable range for the horn and is simple, save for the occasional grace note embellishment. In measure 31, the horn and accompaniment play a unison syncopated pattern that appears throughout the work. This agitated material alternates with the initial theme, until a grand pause in measure 70.

In several passages, the horn imitates melodies played in the accompaniment, which presents an interesting challenge to the hornist. For instance, in measure 79, the frogs play a rhythmic figure and then the hornist plays the same figure, which is marked, “like a chatterbox.” This section gives way to “11 seconds of earth moving… crunching and croaking…”. Until this point, the piece has largely been in the key of D♭, but the Sensuously section at measure 102 establishes the key of A, with an added flat sixth (example 5). These two tonal areas alternate for the rest of the work.

The titular coyotes enter at measure 111 with wild howls, and the horn enters the higher range for the first time in the work. Starting at measure 121, the coyote rhythms and gestures align with the horn melody, which creates an interesting dialogue. At measure 141, the coyotes play a fast-moving, wailing call, and the horn imitates its melodic contours in the passage marked “struttingly” at measure 143. This material starts on a c#"', which is half a step outside of the traditional horn range. All of the other musical ideas in the piece stay within a comfortable range of a talented high school hornist. As a result, the motif sounds as odd on the horn as it does when “sung” by the coyotes.

When the D♭ harmonies return, they are suddenly tranquil but transition back into the material in A through syncopated passages. The work concludes climatically through a passage marked “In full strut” that features repeated variations on the harmonically ambiguous high coyote material, while multiple coyote voices are heard alongside drums.

From a performance perspective, the work is fairly easy. Most of the accompaniment figures start on downbeats and have cues in some of the more ambiguous sections, which makes the ensemble element of the work simple. The fastest note duration is some brief 16th notes on page 2. At the tempo of quarter note equals 109, these flourishes are not difficult. The syncopations are always played in unison with the fixed media, so they do not pose a significant challenge either. However, as previously mentioned, the potentially challenging aspect of this work that comes across as somewhat incongruous with the rest of the work is the high coyote motif. The author’s opinion is that the motif is an effect and exact execution is not necessary to perform the work.

Title: *Baroque Shapes and Space Music*

Composer: Richard Burdick (b. 1961), United States

Publisher: Musicaneo.com

Dates: Written 1993, revised 2002, 2010, and 2016

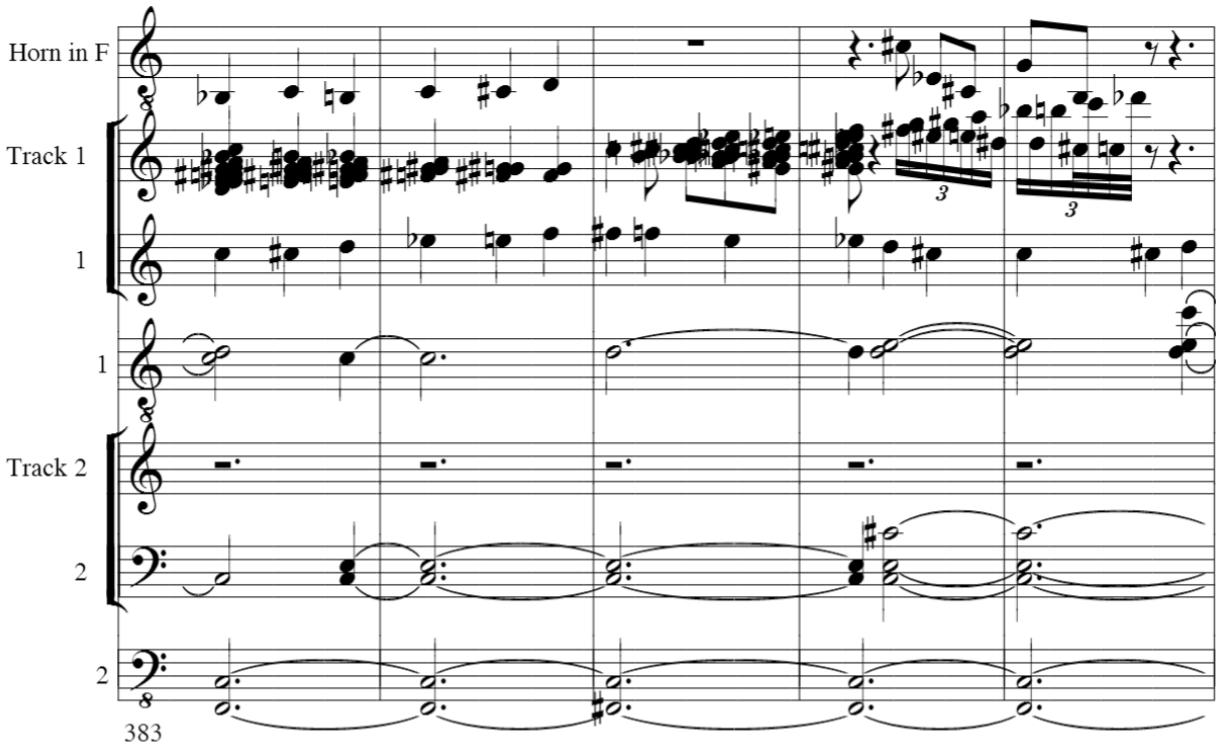
Format of Horn Part: measured part with cues and score

Duration: 11'30"

Difficulty Level: V Virtuoso

Extended Techniques: none

Range: f#-c#"'



Example 6: mm 383-387, tone clusters

Notes: Burdick writes that the title comes from the structures he used to compose the piece, such as increasing divisions of the octave and the abstract arrangement of notes to depict elemental shapes like triangles, squares, and waves. This work is divided into fourteen sections: a long introduction, twelve movements that each depict a symbol of the zodiac, and a coda. 6/8 is the meter for the entire piece, with a printed tempo of dotted quarter note = 133. However, given the prevalence of running quarter notes and hemiola half notes, 3/4 would be a more logical meter, with a tempo of dotted half note = 66.

The introduction lasts from the beginning to measure 373. Lasting about 5'40", this comprises about half of the piece. To open the work, the sounds of varying sampled instruments, such as celeste, strings, and trumpet, which make up the whole accompaniment, individually play dotted half-notes notes an ascending chromatic scale. Elements are gradually added to thicken the texture, such as the tritones in measure thirteen and the quarter notes in measure 37. Tritones are the most important interval in the work, and these are frequently used to create diminished triads. Augmented triads and arpeggios are also common. The heavy usage of chromaticism helps create a largely atonal musical environment. When major harmonies do appear, such as in measure 101, they are used in a non-functional way.

In measure 85, the horn enters with a slow moving line that serves more as accompaniment to the fixed media than it does as a foreground melody. This line slightly increases in complexity starting in measure 185, but it remains relatively static. In this section, the horn starts playing the frequent rhythmic motif of the last 8th note of measures tied to the first note in the next measure. At the very quick tempo, this rhythm

can be challenging to play correctly as it takes on more complexity later in the piece, particularly in the "Scorpio" section. In measure 279, the marking "*I love you*" appears over G, C#, and A, respectively. This is the only text that appears in this capacity during the work. Throughout the horn part, Burdick occasionally uses a proprietary phrase marking to indicate where the direction of the phrase should lead. This is helpful to players who may not be as familiar with the atonal harmonic language.

Each of the twelve short sections is named after a zodiac symbol, and each one presents a caricature that is a variation on the introductory music. During these variations, the horn part becomes considerably more active, but not necessarily more soloistic. For instance, in Cancer, the horn plays an accompaniment figure, while the lowest voice in the fixed media plays a simple melody against a pulsed drone. Each section presents a different texture, but the only significant harmonic difference is that some of the variations contain successions of cluster chords. For example, Aries and Sagittarius both contain chords with so many closely-spaced notes that counting the exact number is difficult (example 6). Leo contains some complex non-tertian chords as well, but they are spaced much more widely.

One challenge this work presents is following the score. No cues are present in the part after measure 85, and the score lists channels rather than instruments. At moments when the piece becomes rhythmically complex, the score does not provide any indication of which sounds are most prominent. For instance, some of the quarter note lines are quietly played by synthesized strings, which makes them difficult to follow

when a prominent hemiola is being played by a trumpet sound. In the program notes, Burdick suggests using a click track.

Title: *Moments When We See*

Composer: Richard Burdick (b. 1961), United States

Publisher: Musicaneo.com

Dates: tape created 1981, horn part written 1987, revised 2016

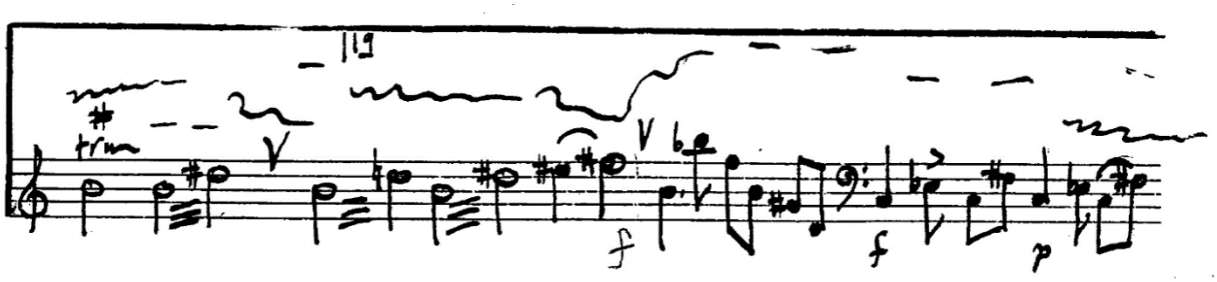
Format of Horn Part: chronometric score

Duration: 9'

Difficulty Level: IV Graduate performance Major

Extended Techniques: tremolo, multiphonics

Range: B-b"



Example 7: page 1, abstract illustrations in accompaniment

Notes: Burdick writes on his website, "The work creates an 'other world' environment. The title refers to the moments when the two sound sources come together. In general the piece presents two independent entities."[6] Like Burdick's other works, this one was composed using the I Ching fortune telling technique, which was famously

[6]Richard Burdick, "Richard Burdick's Op. 44," accessed March 20, 2017, http://www.i-ching-music.com/opus44.html.

applied to music by John Cage. Originally, *Moments When We See* was written for tape, and the horn part was added later.

The accompaniment in the first section is best described as “noisy.” It lacks discernible pitch content and brings to mind the music of the Italian Futurists with its “industrial” quality. Due to the lack of pitch content, the accompaniment is notated using drawings (example 7).

The horn part in the first section is angular and atonal. Several of these “moments when we see” occur when long notes in the horn part correspond to crashes in the accompaniment, and these are indicated with double-ended arrows between the horn note and the depiction of the sound. This section covers nearly the whole range of the horn.

The second and longer stylistic section lasts from 2'53"all the way to the end of the piece at 9'07", and the horn part consists entirely of rhythms with whole note durations or longer. At the beginning of this section, the horn part changes to alto clef, which is an intriguing, albeit unorthodox, solution to ledger lines in the horn’s middle-lower range. Most of these notes call for multiphonics, and during the frequent double whole notes, either the horn or the voice will change by a half step. By placing the horn notes in this range, ease of playing unisons and minor seconds multiphonically comes with the tradeoff of the inherent challenge associated with taking in enough air to sustain the long low notes.

Accompaniment in the second section has more distinctly recognizable elements of rhythm and pitch. A pulse is played by a synthesized “pinging” noise that also conveys

atonal pitch content. In the very last portion of the piece, from 7'34" to the end, high-pitched whines and other industrial sounds return.

Title: *Alien Loop de Loops*

Composer: Howard Buss (b. 1951), United States

Publisher: Brixton Publications

Dates: written 2015

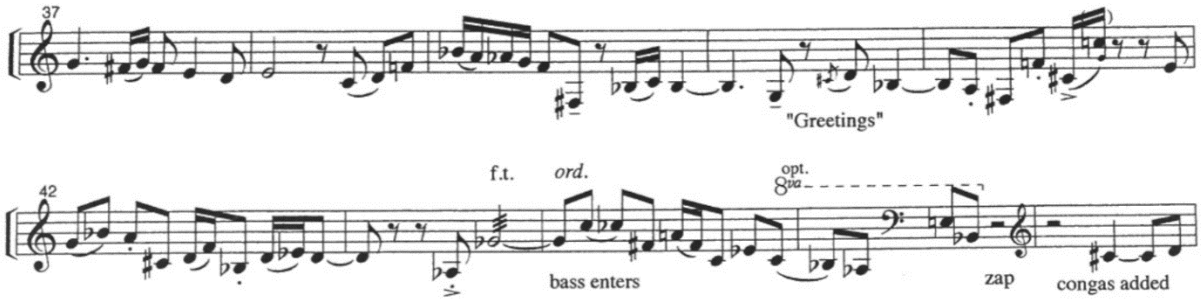
Format of Horn Part: measured part

Duration: 7'

Difficulty Level: IV Graduate performance major

Range: $B^{\flat}$-a"

Extended Techniques: flutter tongue, air in mouthpiece, glissandi



Example 8: mm 37-46, text descriptions of accompaniment sounds

Notes: Originally conceived as a trombone solo piece, *Alien Loop de Loops* was adapted for horn in 2015. The trombone version was the winner of the 2015 American Trombone Workshop National Composition Competition. The horn edition was written for Gene Berger, the horn professor at Ball State University. A third version of the work is for tuba/euphonium.

According to the program notes, the composer "envisioned a performer outside in an open area during an air show by an alien craft." When the author contacted Buss, he wrote: "As you know, *Alien Loop de Loops* is a programmatic fantasy piece; so, it is meaningful to the audience to know the story behind the 'fantasy,' either with program notes or a verbal introduction. Tastefully done lighting effects and stage props are also a possibility. Although not indicated in the program notes, the work could be treated as a theatre piece."[7]

Stylistically, it is best described as a funk piece. Oxford Music defines Funk as, "It features syncopated interlocking rhythm patterns based on straight quaver and semiquaver subdivisions, a vocal style drawn from soul music, extended vamps based on a single and often complex harmony, strong emphasis on the bass line"[8] Aside from lacking the vocal style, all of the other traits appear in Buss's work. The instrumentation of the accompaniment includes: bass, drums, guitar, sirens, airplane sounds, and other noises (example 8).

The horn starts the work with an unaccompanied solo that contains the main melodic ideas of the piece. Set in the lower range of the horn, these singable melodies present the hornist with a great opportunity to improve one's low horn playing or fill out a recital program without taxing endurance. Because the horn plays for almost a minute

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[7] Howard Buss, email to author, September 15, 2015.

[8]David Brackett, "Funk" Grove Music Online, ed. Deane Root, accessed August 28, 2017, http://www.oxfordmusiconline.com.

before the fixed media enters, the player has the opportunity to create rubato and dynamic changes outside of the minimalistic initial marking of forte. The fixed media starts in measure 25, and options for starting it include: a foot pedal, another person serving as the fixed media operator, or Buss also suggests that the player can remove the right hand from the bell during the trill to start it.

After a statement of the bass groove, the guitar takes over as the foreground voice for the main melodic material. The horn interacts with these lines by playing both melodies and counter-melodies. Cues are written into the part, but they only appear as words, never notes on the staff. This poses a performance challenge in a couple spots. For example, in measure 61, an alarm starts. The sense of meter disappears, and no cue is given to indicate what beat the accompaniment re-entrance occurs on. Melodic wanderings continue with a variety of instruments playing grooves in the fixed media.

A contrasting section starts at measure 126, where the electric guitar is not included. The horn's melody in this passage is a repeated rhythmic pattern that mostly occurs on g'. During this section, electronic sounds dominate the traditional funk instruments, in a way that is reminiscent of contemporary electronic dance music, while still maintaining the legato funk 16th notes and prominent bass line. Following a second passage of the vamped rhythm, the unusual extended technique of "air woosh" is written. The author suggests the following technique for measures 170-177: quickly remove the mouthpiece from the horn, flip it so the cup covers the lead pipe, hold it a few centimeters from the horn, and blow into the shank of the mouthpiece.

Short phrases are played for the rest of the piece with rests in the horn part for slow, percussive effects, such as a thunderclap's decay that lasts for a measure. In the section after measure 126, the absence of the guitar makes the section sound mellower, save for the dramatic electronic dance music outbursts between measure 144 and 149.

Title: *The Everlasting Voices*

Composer: Francis Ka Nin Chan (b. 1949), Hong Kong

Publisher: Canadian Music Centre

Dates: written 1981

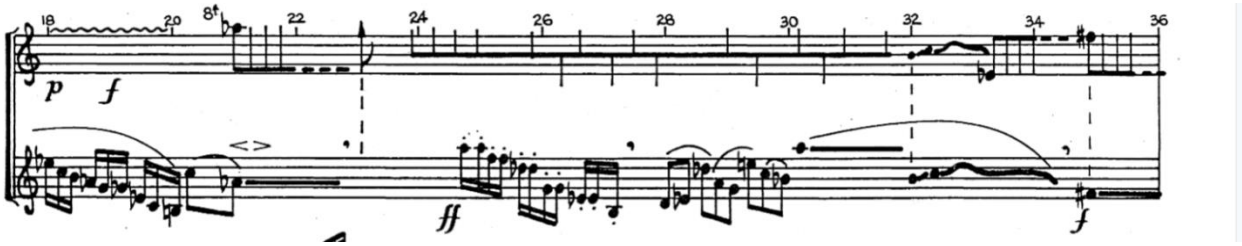
Format of Horn Part: chronometric score with horn line below fixed media

Duration: 9'

Difficulty Level: V Virtuoso

Extended Techniques: singing through horn, stopped horn, mute, strike bell with nails, blowing air through horn, tongue click, valve noise, pitch bends, flutter tongue

Range: c-c'"



Example 9: 6'18", angular, atonal horn writing

Notes: This work was inspired by W.B. Yeats's poem, "The Everlasting Voices":

> O sweet everlasting Voices, be still;
> Go to the guards of the heavenly fold
> And bid them wander obeying your will,
> Flame under flame, till Time be no more;
> Have you not heard that our hearts are old,
> That you call in birds, in wind on the hill,
> In shaken boughs, in tide on the shore?

O sweet everlasting Voices, be still.[9]

It was originally written for soprano and tape in 1979 and adapted for horn in 1981. In that same year, the piece won the International Horn Society's Composition Contest in the category of works for horn and tape. Randall Faust's review writes in the 1982 *Horn Call* review, "*The Everlasting Voices* might have the contents of a catalog, but it reads with the drama and clarity of a poem."[10]

Logistically, this piece is challenging to start. The horn plays alone during the first measure and then the fixed media starts. Because this work uses a chronometric grid, the stopwatch also needs to be started with the fixed media. Perhaps due to the digitization of the file, the fixed media actually starts a little over one second after the track begins, so the author recommends starting the stopwatch as soon as the stopwatch operator hears the first sound. The accompaniment is largely made up of purely synthesized sounds, but it also includes wailing vowels sung by a female voice and metallic, percussive noises.

The tone of the work matches the seriousness and depth of the text. The melodies and dense harmonies of the work are atonal and contain frequent, complex, angular

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[9] Ka Nin Chan, "Programme Notes of the Everlasting Voices," accessed August 29, 2017, http://www.chankanin.com/PN/TheEverlastingVoicesPN.htm.

[10]Randall Faust, "Winner of the 1981 Composition Contest, Category I," *The Horn Call* XIII, no. 1 (October 1982): 67.

contours (example 9). Chan's choice of sounds for the fixed media creates an otherworldly ethos that is supported by the interaction with the frequent extended techniques for the horn. For instance, the horn starts the work with stopped 16th notes and the fixed media enters in a way that grows out of the horn part. At 2'16", the horn bends the pitch to create a very wide vibrato that matches the fixed media. The hornist is asked, at times, to use the unorthodox extended techniques of singing into the horn, which is not to be confused with multiphonics, and clicking one's tongue into the horn. Much of the horn part is difficult due to the fast, atonal flourishes that span above to below the treble clef.

This piece's form is best described as through-composed. The repeating sounds at the beginning come back at various times throughout the work, but never in the same context. The accompaniment starts out with entirely synthesized sounds, and as it goes on, recorded sounds are introduced. Around 2'20", some wailing sounds appear that are reminiscent of human voices. These sounds transition into the recorded cries of a soprano. Metallic sounds grow after the voice exits, and they are present for the rest of the work. The care used in planning these distinctive sounds implies deep thought on the part of the composer, but like much of stylistically modern music, this aesthetic can come across as esoteric to general audiences.

Title: *Dialog*

Composer: Vladimir Djambazov (b. 1954), Bulgaria

Publisher: unpublished

Dates: written 1981

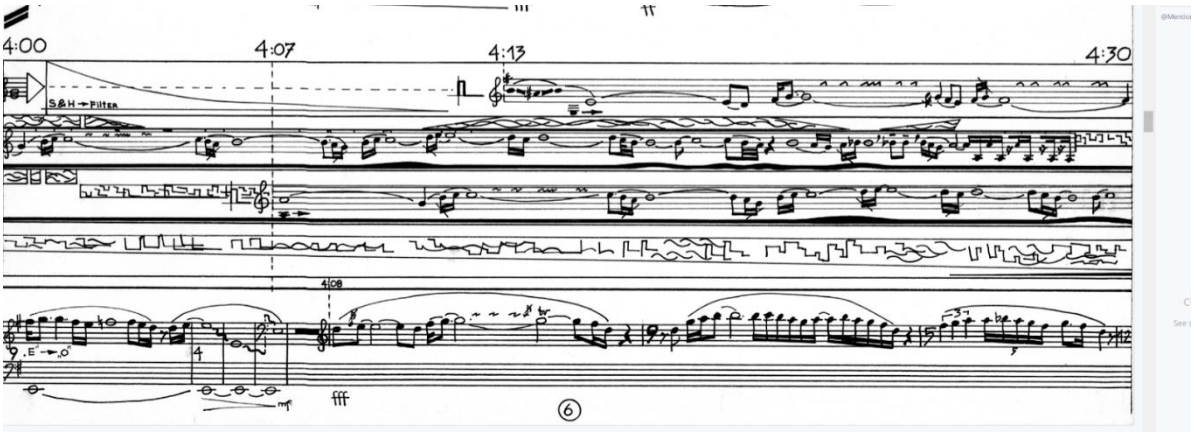
Format of Horn Part: chronometric score

Duration: 15'30"

Difficulty Level: V Virtuoso

Extended Techniques: stopped horn, pitch bends, multiphonics, flutter tonguing, tongue release, half valve, mute, right hand trill, glissandi, improvisation, quarter tones, slide removal, blowing air into horn/mouthpiece

Range: C-c#'"



Example 10: page 6, complex multiphonic writing

Notes: This piece won an Honorable Mention in the 1981 International Horn Society Composition Contest in the category of works for horn and tape.[11] It was written for four channel tape, and each of the channels is notated chronometrically on the score. Because there are long solos for the horn to play unaccompanied, the chronometric notation is quite helpful for lining up entrances with the fixed media.

A long, unaccompanied solo for the horn opens the piece before the fixed media is turned on. It contains pitch bends between stopped and open, but due to the presence of some whole steps in the very low range of the horn, valves need to be used. As the horn moves higher in its range, the line becomes more active. During this initial section, there is no sense of meter or, like the rest of the work, tonal center.

The first fixed media sounds, several high-pitched synthesized long tones, start at 0'01" on the score, which is actually 0'05" on the digital accompaniment. To compensate for this difference, the hornist should start the fixed media file four seconds after beginning the stopwatch. At 0'13" the horn briefly establishes a 5/16 meter and has a dramatic dynamic shift from *p* to *ff*. Following more unmetered tones, the horn takes another unaccompanied solo that ventures into the absolute lowest range of the horn and ends with an "AT" articulation; i.e., ending the note using the tongue.

Just before 1'12", the horn plays a right hand trill, a technique notated by "tr (R.H.)." Following a pause, the horn creates a subtle musical line by playing dramatic

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[11]Randall Faust, "Winner of the 1981 Composition Contest, Category I," The Horn Call XIII, no. 1 (October 1982): 68.

dynamic changes on a held e’, over oscillating fixed media tones. When the fixed media cuts out, the horn plays an unaccompanied, embellished melody over the range of a fifth. At 2'52", after the fixed media enters with some ghostly oscillations, the horn interacts with those sounds by playing melodic material over a multiphonic drone (example 10). The style of the horn line remains embellished and within a fifth. As the intensity of the fixed media cacophony grows, the horn now plays the drone, with the melody sung into the horn.

When the fixed media abruptly cuts out, the horn establishes a minimalistic section with a five-note motif. In this passage, the fixed media consists of a horn sound in each channel, which each play that sole motif: a differing first note of a 16th note sextuplet that slurs into an e', followed by three e's and a rest. This motif is played in various combinations of the solo horn and/or one or more channels at the same time. The passage is in 4/4, and a sense of pulse is discernable because the entrances are only on main beats, but the sense of meter is limited. Around 5'48" the motif is repeated and modified in the fixed media, while the solo horn plays increasingly rhythmically complex divisions of a 16th note septuplet. The fixed media intensifies after the horn stops playing until it becomes pitchless synthesized noise.

The next section, which starts at 7'07", features an assortment of atonal fragments for the horn that alternate randomly between stopped, open, and muted, with some flutter tongue and glissandi thrown in. Meanwhile, the fixed media plays synthesized industrial noises. The horn line simplifies into the horn playing similar patterns, but just on an e'. At the bottom of page 14, the hornist pulls the first valve slide out, notated by a notehead

with an X through it, and then blows air into the slide, notated by triangle noteheads, followed by playing into the open slide, notated by asterisks for noteheads.[12]

Before 9'17", the noteheads become Vs, which denote that the hornist should blow air rhythmically into the horn. Following a rest, the player flips the mouthpiece upside down into the horn and produces rhythms by blowing air. Assorted synthesized sounds, including wind-like ones, continue to play independently of the horn line. A section of improvised glissandi for the horn begins after 9'35", while the accompaniment plays sounds befitting of an extraterrestrial communications relay. After that section dies down, the fixed media plays slow-moving waves of non-specific pitch while the horn plays a slow-moving line that adds quarter tones toward the end. 11'35" employs a chaotic use of modified music concrète of various instruments playing unrelated music. While these sounds continue, the horn plays a variety of extended techniques, which give way to repeated half-valve notes as the accompaniment finishes with rhythmic knocking.

[12]Vladimir Djambazov, email to author, March 22, 2017.

Title: *HOR-IZO-N*

Composer: Nicola Ferro (b. 1974), Italy

Publisher: Alessi Publishing

Dates: published 2013

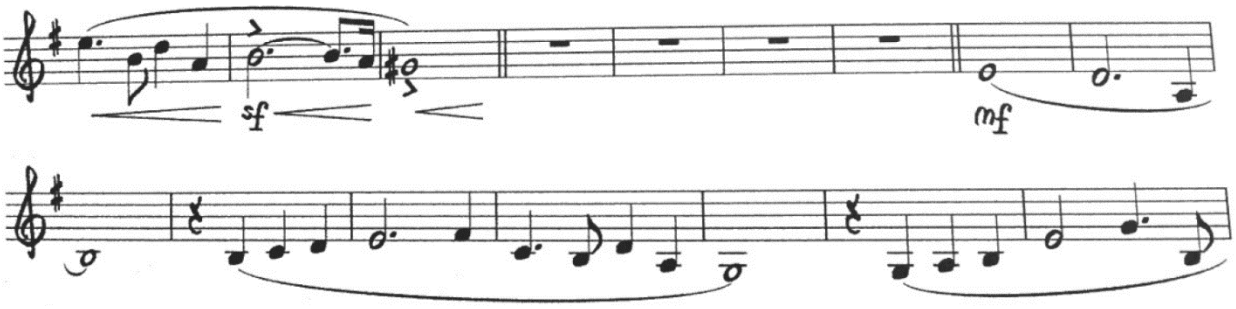
Format of Horn Part: metered part

Duration: 5'30"

Difficulty Level: II Talented high school student

Extended Techniques: simple vibrato

Range: e-g"



Example 11: mm 86-101, reprise of opening material in mm 93

Notes: This work was written for Vladimir Cainero, who premiered it at the International Horn Society's MidSouth Workshop.[13] The only significant challenge that it presents to a performer is its lack of rests, but the solo line stays within a comfortable range for the entire piece. The rhythms for the horn part are not complicated. Despite the

[13]"HOR-IZO-N | Alessi Publications" Alessi Publications, accessed May 1, 2017, http://www.alessipublications.com/category/category/french_horn.

frequent syncopations in the accompaniment, the horn never plays syncopations, though there are some simple hemiolas. The tempo is constant and easy to follow for the entire work, which makes it a good choice of a first piece to play with fixed media.

HOR-IZO-N begins with a conga groove that establishes the unmarked tempo of about quarter note = 63. Chimes and cymbals are also used sparingly. After the initial four bars of introduction, the horn enters with four phrases in the middle-low range. These singable melodies use the E Aeolian mode. While the horn plays an e in measure nineteen, a piano enters with a syncopated counter-melody. Following a timpani roll, strings enter with quarter note chords at measure 22, as the horn line rises higher into the staff.

At measure 38, the piano gently takes over for several measures as the dominant voice while the horn rests. When the horn comes back in, its line in E major contains four sets of quarter-note triplets that include grace notes in three of them. The next section is marked “luminoso” and features a synthesized wordless choir playing expansive chords beneath the horn’s singing melody. At measure 65, the horn’s *ff* melody is accompanied by the re-entered string quarter notes. These quarter notes transform into a climactic 8th note line in the strings in measure 81, while the horn continues to play melodies primarily composed of dotted quarter note, eighth note, and two quarter notes. After four measures of a quieter version of the conga groove from the beginning that lacks chimes and cymbals, the horn re-enters with an exact replication of the opening four phrases (example 11), and the work quietly ends with the conclusion of this melody.

Title: *Deanimator*

Composer: Marcus Fjellström (b. 1979), Sweden

Publisher: unpublished

Dates: written 2009

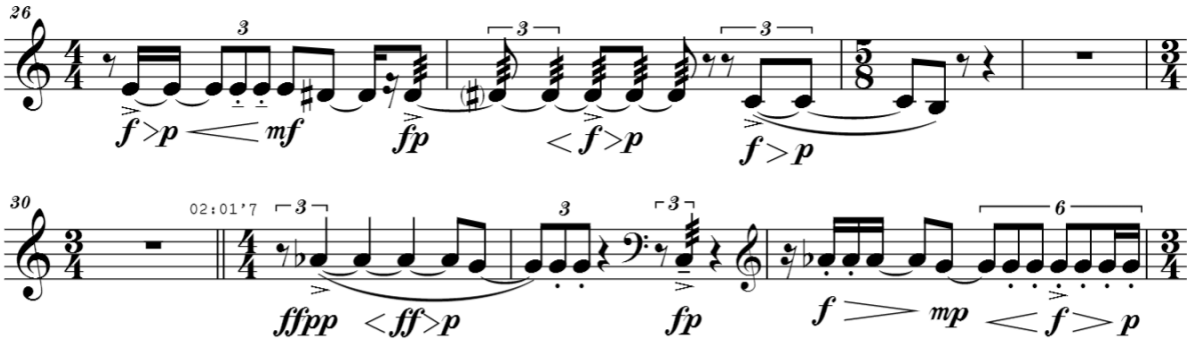
Format of Horn Part: metered part with timing cues

Duration: 10'

Difficulty Level: IV Graduate performance major

Extended Techniques: half/full stop, flutter tongue, vibrato

Range: G#-a$^{\flat}$"



Example 12: mm 26-33, unusual rhythms

Notes: *Deanimator* was written in 2009 for soloist Sören Hermansson. Fjellström writes in the program notes that the piece explores the relationship between man and machine "to fuse the organic with the mechanical, the natural with the artificial, the metal with the flesh."

At first glance, the frequent ties over a complex rhythm look peculiar. However, they are written in a complex way to indicate Fjellström's intention to use dynamics as a

precise rhythmic element. Some of the unusual looking rhythms do also result from the intentional absence of audible meter (example 12). The piece is not melodic in the traditional sense, and the interesting melodic surrogate is the textures created between the horn and the fixed media, through the dynamics, range, and extended techniques in the horn, all within the free, industrial fixed media sound context.

At the beginning, the accompaniment does not contain discernible pitch content; it consists of static-like synthesized noises that integrate with the horn's low notes. A repetitive motif throughout the work is half stopped grace notes to start some notes that come after rests. The horn matches the fixed media's contours through dynamic swells and flutter tongue. Because of the importance of sudden sound swells, silence (and near-silence) is utilized effectively to prevent sensory overload and disrupt any potential sense of meter.

During the middle section, toy piano and strings enter and the horn is heard much more distinctly from the fixed media. Although these instruments have more recognizable pitch content than the synthesized notes, they reinforce the atonality that was established by the horn in the beginning of the work. The use of the mute in the latter part of this section adds an interesting color to the most soloistic passage in the horn part. Following a louder section that is similar to the beginning, the piece gradually gets softer, until it ends.

Because integration between the horn and fixed media is so essential in this work, it almost necessitates amplification for the horn and simple mixing of the two sources. One interesting trait of the accompaniment files for this work not seen in works by other

composers is video “click track” accompaniment. Fjellström created an audio file with a click track for practice purposes and a video file that shows the beats visually (intended for the performer’s eyes only) while the accompaniment audio plays.

Title: *Conjureman*

Composer: David Hainsworth

Publisher: Jomar Press

Dates: written 1995

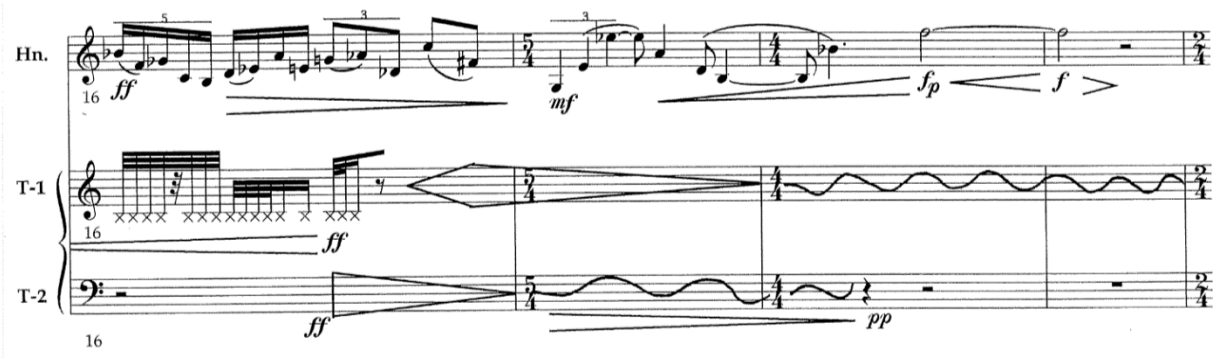
Format of Horn Part: metered score

Duration: 11'

Difficulty Level: V Virtuoso

Extended Techniques: right hand effects, multiple types of glissandi, multiphonics, half valve, random tonguing, indeterminate pitch, buzz tone, vowel changes

Range: $D^{\flat}$-c'''



Example 13: mm 16-19, rhythmic motif in mm 16

Notes: Unlike many pieces in the medium, *Conjureman* requires a technician to operate the fixed media throughout the work because it is made of three separate files. The piece also includes three channels in the accompaniment, but Hainsworth does not specify speaker set-up instructions to make the most of this quirk. A fixed media operator

will need to watch the hornist carefully, as the first sound in the accompaniment, a long percussive sound, should line up with the hornist's first note.

Although the tempo is marked half note = 55 and the time signature frequently changes, no meter is ever strongly felt during the piece. During the first measure, the fixed media plays a synthesized sound that sounds somewhat like a quiet roll on a snare drum practice pad. This is a common effect throughout the piece but, due to its low volume, is difficult for the hornist to hear while playing. After the horn's first simple atonal line, an F, C, D that discretely appears as a motif throughout the work, the player is asked to play multiphonics that bend a unison pitch down a half step. Low string pitches are introduced in the fixed media, while the practice pad sound continues with random-sounding rhythms, and the horn continues playing atonal lines. In measure sixteen, the horn plays five quintuplet 16th notes, four 16th notes, three triplets, and two 8th notes (example 13). This rhythm appears at various parts throughout the work.

At measure 23, the first fixed media file stops for an unaccompanied solo in the horn. This solo includes more multiphonics and introduces hand glissandi. When the accompaniment re-enters with the second track, it continues to play rapid percussion flourishes with limited pitch content. Meanwhile, the horn plays a variety of stopped and open melodic ideas with an assortment of rhythms. In measure 73, the fixed media plays long tones that recall the multiphonic pitch bends in the horn, while the soloist introduces the techniques of rapid arbitrary tonguing and half valve glissandi. At this point, many different synthesized sounds are heard with oscillations and indeterminate pitches. When the strings take over as the dominant texture in measure 117, the horn starts out playing

long tones in its lowest range. When the accompaniment introduces crackling sounds, the horn transitions to playing otherworldly, quiet, and rapidly tongued half-valve glissandi.

The next section of the work begins with a percussion noise like the first measure, followed by cacophonous sounds of music boxes, synthesized whines, celeste, strings, and other noisemakers. While the instruments continue to make sounds reminiscent of a broken jack-in-the-box army, the horn continues to play half-valve effects, interspersed with the melodic motif of a downward minor sixth and upward minor seventh. In measure 169, the horn begins playing an extremely complicated line that includes large jumps and intricate thirty-second note lines with seemingly no connection to the material in the accompaniment. This passage continues until measure 184.

Following the introduction of "rude" glissandi, the horn plays frequent half-valve effects and written out trills over chaotic string and synthesized sounds, with wind-up toy sounds added as the passage progresses. When the accompaniment fades out, the horn takes its second unaccompanied solo. This solo includes the rhythmic 5-4-3-2 motif, as well as the written out trill idea. When the fixed media returns for the final section, it includes frequent use of the fast percussion noises from the beginning, as well as atonal string long tone fragments. The horn's final note is a pedal D♭, and the fixed media continues to fade out after the horn stops.

Hainsworth's piece contains interesting uses of half-valve techniques, but the patterns it employs are likely too esoteric for a general audience to appreciate.

Title: *Horn Call on Makara Beach*

Composer: Ross Harris (b. 1946), New Zealand

Publisher: Sounz.org.nz

Dates: written 1991

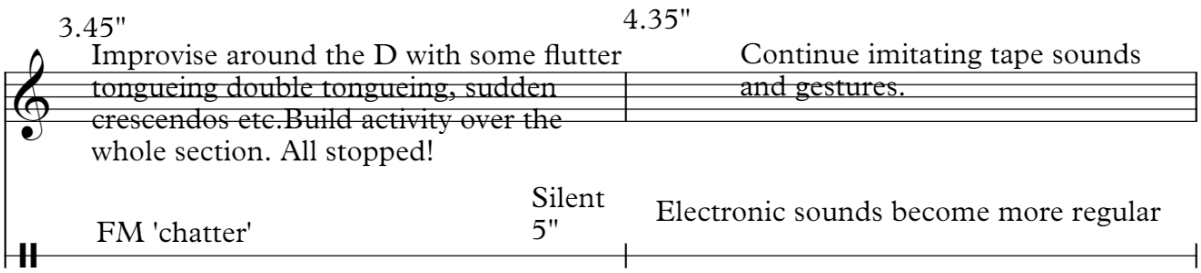
Format of Horn Part: chronometric

Duration: 9'

Difficulty Level: IV Graduate performance major

Extended Techniques: valve tremolo, stopped horn, improvisation, fluttered double tonguing, specified harmonics

Range: E-b"



Example 14: 3'45", improvisation instructions

Notes: The title of this work is *Horn Call on Makara Beach* on the score, but the publisher lists it as *Horn Call on Makara Cliff* on their website.[14] Regardless, it was presumably named for Makara Beach, which is a coastal area in New Zealand.

[14] "SOUNZ," SOUNZ, accessed August 29, 2017, http://sounz.org.nz/resources/17124.

Before the piece starts, there is a questionably long B tuning note. This work is the only one in the survey that contains a tuning note, and the author believes that performing it detracts from the work, especially due to its 30” duration. One way to start the piece without the tuning note is to run both a stopwatch and the accompaniment in advance of the performance, pause them at 0'36", and start both simultaneously from the stage. The actual piece begins with the horn playing a long tone on b', and when it embellishes the b' with an accented a', the horn sounds on the fixed media imitate it in stereo, and they create a consonant, complex chord. This passage establishes major seconds as an important interval throughout the entire work. As the synthesized horns give way to a mellow chord, the solo horn plays a call that is harmonically unrelated to the chord, which is followed by a descending sixteenth note “FM sweep” in the fixed media. Immediately after this idea, the horn has a similar passage, but despite the marking of “imitate tape,” the semi-chromatic horn line differs from the nebulous, consonant fixed media line.

Around 1'50" the horn has a tremolo marked, but the specified fingerings of “F horn 1-1/3" will not produce a tremolo. In the absence of a specified tremolo note, the author suggests using the second valve on the $B^{\flat}$ horn, which will produce a b' to d". Following a dissonant cluster of horn notes and synthesized sounds, the solo horn plays a loud tattoo on an A above the staff. Around 3'08", the horn plays its most melodic passage that is not improvised. This line is in the range below the treble clef staff, and it is marked “chant-like.” Like the rest of the work, no meter is perceived.

Out of the nine minutes of this piece, almost one-third of it is improvised. The first improvised passage appears at 3'45", with the marking “Improvise around the D with some flutter-tonguing, double tonguing, sudden crescendos, etc. Build activity over the whole section. All stopped!” (example 14). The performer is encouraged to consider whether this instruction is meant to be taken literally or if it is intended as a joke. During this portion, which lasts until 5'20", the accompaniment plays a variety of non-harmonic synthesized sounds with no discernable pattern. Following that passage, the hornist improvises an ascending stopped line until it reaches b". The last non-improvised line for the horn is a slow, dramatic atonal line over some complex and largely static chords. For the last two minutes of the piece, the hornist is instructed to “Move away from centre stage and improvise on odd numbered harmonics 7, 9, 11, 13, 15 on second valve on F horn. Imitate and blend with the electronic sounds.” These notes create a B dominant triad, which awkwardly contrasts with the non-tertian harmony of the fixed media as it has been heard for the entire work.

Overall, the piece contains some beautiful and creative moments, but the author believes that the improvisation sections are either too long or too restrictive to be musically compelling.

Title: *Thoughtful Wanderings*

Composer: Douglas Hill (b. 1946), United States

Publisher: International Horn Society

Dates: Written between 1988 and 1990

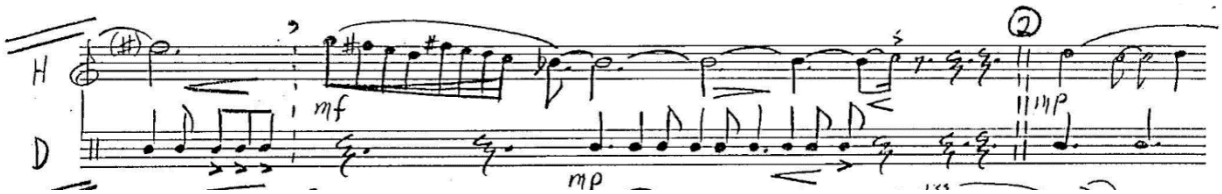
Format of Horn Part: partially metered score

Duration: 12'30"

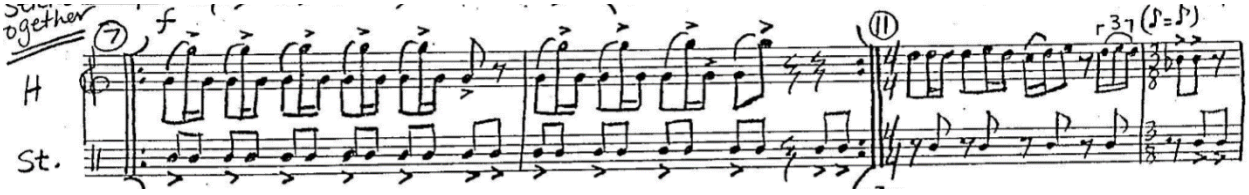
Difficulty Level: IV Graduate performance major

Extended Techniques: stopped horn, glissandi

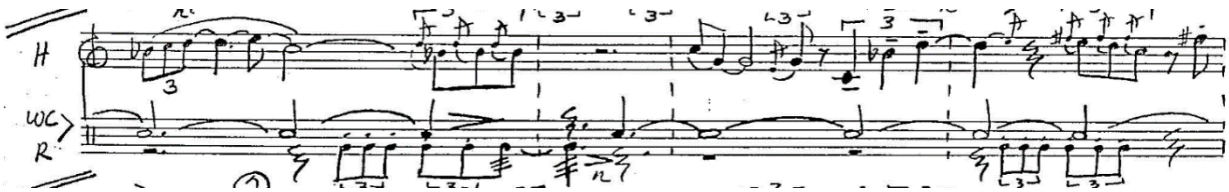
Range: f#-c'''



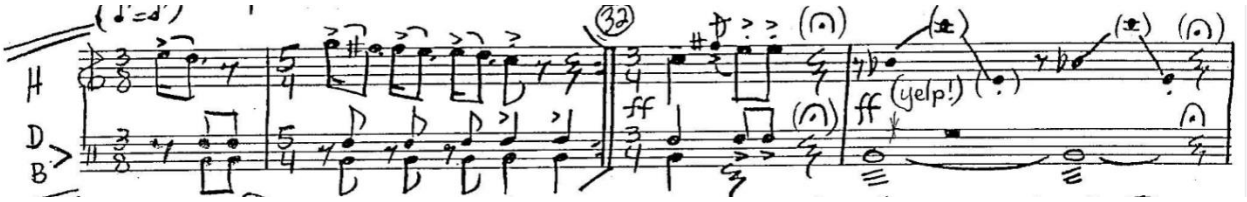
Example 15: mov 1, page 1, contoured glissando



Example 16: mov. 2, mm. 7-13, rapid octave jumps



Example 17: mov. 3, page 5, embellished melody



Example 18: mov. 4, mm. 30-33, “yelp” glissandi

Notes: *Thoughtful Wanderings* exists in two versions: one for percussion, natural horn, and fixed media and another for just natural horn and fixed media. For the purposes of this document, the version for only natural horn and fixed media, which contains the percussion lines from the other version in the recording, was examined. The inspiration for the piece was Native American flute music, and the choice of natural horn instead of valve horn was made to imitate the limited pitches available to the traditional flutes. Outside of the percussion instruments, all of the sounds on the fixed media are non-rhythmic nature sounds, such as wind and birds. In the style of Native American flute music, the melody is embellished and only a limited set of pitches, which for the natural horn are the notes of the overtone series. One challenge presented by all of the rhythmic fixed media being played by percussion is that the hornist cannot use harmonies to better follow the score. In other words, if the player gets off from the fixed media, it can be challenging to determine which measure is being played, due to the repetitive nature of the drumming.

The piece is divided into four movements. Eagle at Ease in the Sky, Six-Legged Dance, Woodland Trail, and Spring Dance. Because there is no pitch content in the fixed media, the horn part for the first movement can either be played in E or $E^{\flat}$. The other

movements are in F, E, and E, respectively. Due to the commonness of these historically solo crooks, this piece can be played on even a converted single f horn, which makes it a great work for a hornist to improve their natural horn fluency without necessarily purchasing a historically accurate instrument.

Eagle at Ease in the Sky begins with the sound of wind, prior to the calm drum entrance. Although no meter is used in this movement, a triple meter, such as 12/8 or 15/8 is implied. The horn melody is generally relaxed, in fitting with the title, and it stays in the upper part of the staff. As a result, strong endurance is required to get through the movement. A motif that recurs throughout the movement is a contoured horn glissando while the percussion is resting (example 15). To end the movement, the drum plays a single stick roll, while the horn plays a repeated grace note of b$^{\flat}$" down to a", before the wind continues to fade out.

Six-legged Dance is considerably more energetic than the first movement. The fixed media begins with the peaceful sound of crickets, and the percussion is played by loud sticks hit together. It is metered and changes frequently between a variety of quarter note and 8th note-based time signatures. Rapid and repeated octave jumps between g' and g" are a recurring and challenging pattern (Example 16). Interspersed with this musical idea are fast melodies that also stay in the upper part of the staff. Like the first movement, this one contains few rests. The movement concludes with recorded cricket sounds.

Woodland Trail starts with the sounds of birds and wind chimes. After the horn enters with a slow, simple, but embellished melody (example 17), the rattle enters in the fixed media with triplets that mostly line up with the horn part. At rehearsal 3, the Indian

drum enters in the fixed media, and meter is added. Here, the horn plays a more active melody that emphasizes the main beats by marking most of the 8th notes in groups of two slurred, with the first tenuto and the second clipped. The unmetered measure before rehearsal 4 is marked “stopped,” and this is the one example of right hand technique during the entire work. The repeated glissandi are marked “like the sound of a Veery (Thrush).” After more of the metered melodies, the thrush call is repeated in the horn, and the bird sounds in the fixed media fade away.

The sound of rain is heard at the start of Spring Dance. The horn plays a relaxed melody and the Indian drum comments on the line with rolls during the horn’s long notes. At measure 7, ankle bells play crisp quarter notes in the fixed media, which are easy to line up with the horn’s joyful melody. Repeats and meter changes are common in this dance, and 16th note-dotted 8th patterns are a common rhythm in the horn part. In the middle of the movement, the horn plays enthusiastic “Yelp!” glissandi (example 18). Similar glissandi are written at the end of the movement to bring the entire work to an exciting conclusion.

Title: *Around the Clock*

Composer: Michael Kallstrom (b. 1956), United States

Publisher: unpublished

Dates: written 2005

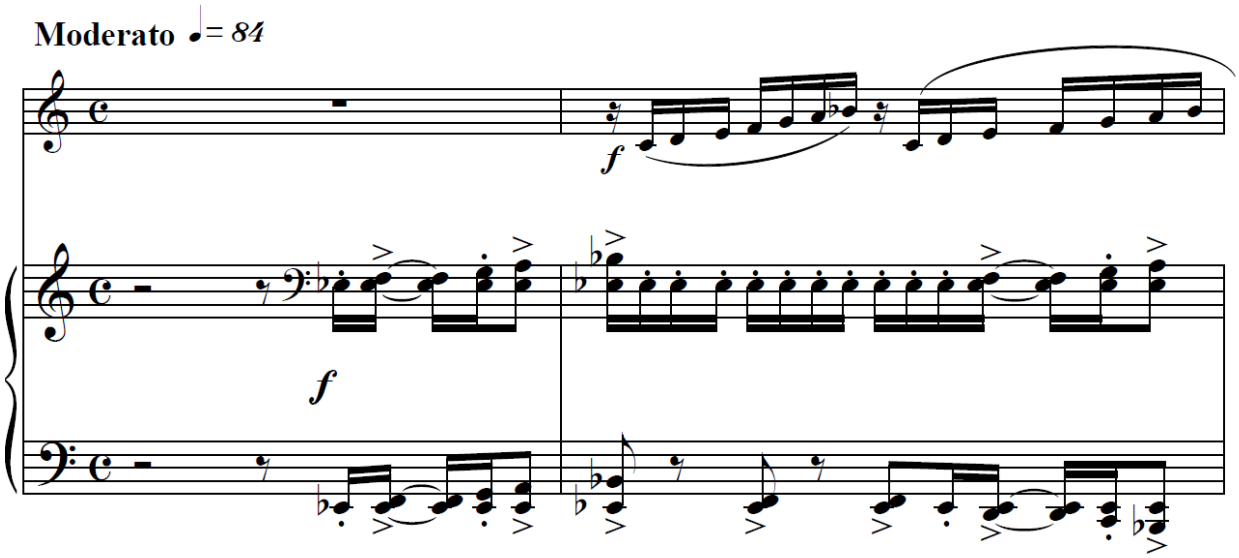
Format of Horn Part: metered score

Duration: 11'

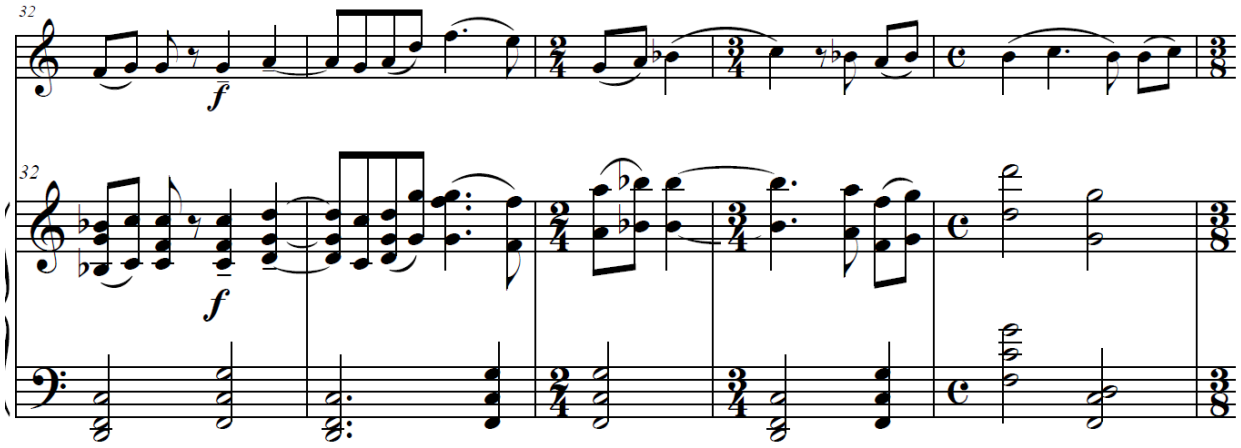
Difficulty Level: III Undergraduate performance major

Extended Techniques: none

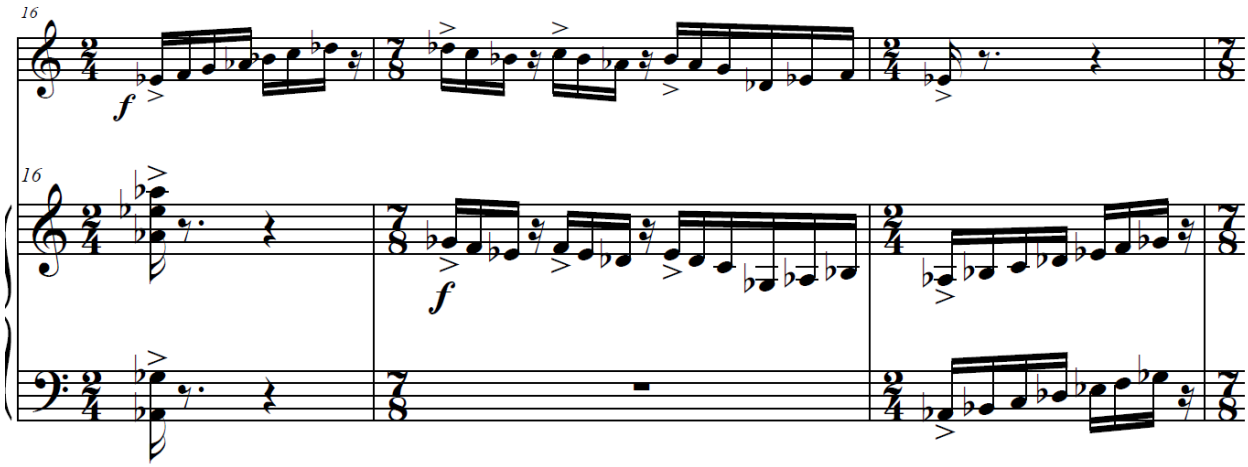
Range: g-b$^{\flat}$"



Example 19: 1st mov. mm 1-2, motif in fixed media



Example 20: 2nd mov. mm 32-36, dramatic material in both parts



Example 21: 3rd mov. mm 16-18, melodic motif

Notes: Originally written for saxophone and band/orchestra in 1995, and *Around the Clock* was adapted for horn and fixed media in 2005 for Paul Basler. It is a lively work that shows off the horn's technical capabilities within a comfortable range.

Kallstrom's rock background comes through in this work through his extensive use of bass/electric guitar and synthesized pitches. The first movement begins with the bass guitar playing the recurring motif, followed by a driving 16th note pattern in the

synthesized sounds (example 19). The horn's initial line is running 16th note scales that start off the beat. It then turns more lyrical and declamatory, with a variety of articulations. The meter changes frequently between a variety of quarter-note and 8th note-based meters. In measure 6, the horn plays Kallstrom's commonly used rhythm of 16th-dotted 8th patterns.

At some points, the horn and fixed media play the first movement motif together, such as in measure 10, and other times one instrument will play it while the other plays something that is not directly related, such as in measure 14, where the horn plays the motif and the fixed media plays 16th-dotted 8th patterns. This variety of polyphony and homophony in the parts is representative of the composition style for the entire work.

At measure 19, the horn plays a relaxed solo marked "espressivo" over mellow 16th notes from a bell-like synthesized sound and a counter-melody in a theremin-like sound. These instruments are joined by a synthesized Japanese Koto, a traditional stringed instrument. In measure 34, the energetic aesthetic from the beginning returns suddenly with the recurrence of the rhythmic motif and virtuosic scales in the horn. The flashiness gives way to an imaginative, quieter section with complex harmonies and slower moving melodies in the horn. As the section goes on, the funky pitch-bending synthesizer takes on a dominant voice in the parallel thirds/sixths in measure 69. The triplet line that emerges in the fixed media grows the intensity as the passage transforms into the lively motif at measure 90.

The horn begins playing a complex sixteenth note line that frequently mixes accidentals, for an intricate harmonic effect. The virtuosic scale patterns return in the

horn, with some variants. In keeping with a light rock style, the movement ends with two 16th notes on the first beat of the last measure and then two 16th notes on the fourth 8th note, for a syncopated effect.

Tambourine and a low synthesized flute sound begin the second movement. Meanwhile, the horn plays a dignified melody that contains some syncopations. Xylophone joins these instruments, and high synthesized mallet percussion underscores the climax of the phrase leading into measure 10. Hemiolas are traded between the horn and fixed media, as the melodies meander through mixed meters. Following a dying away in measure 30, both parts play a dramatic statement together in measure 31 over complex, consonant harmonies (example 20). The remainder of this short movement explores some relatively nebulous melodies and harmonic structures, and it ends with an $A^{\flat}$ chord in non-conclusive second inversion.

At quarter note = 132, the third movement is the fastest and most technically challenging movement of the work. It begins with 8th notes in a percussion-like sound, and leads directly into this movement's recurring pattern (example 21), which the fixed media plays in unison with the horn, using a whimsical synthesized instrument. Bass guitar is quite present, along with a different synthesizer sound in measures 4 and 5. After a drop in dynamic and subsequent crescendo in both parts, the fixed media plays the rhythm from the motif that alternates every other 16th note between two repeating major seconds in different octaves. Following the next statement of the theme in the horn and fixed media, a heavily syncopated bass groove starts in the fixed media, in measure 21.

After two statements of the four-measure calm rock pattern, the horn begins a bluesy, improvised sounding solo.

The pattern in the fixed media changes in measure 39 to a different syncopated accompaniment for the continued solo in the horn. Measure 53 introduces a different texture, as the horn plays the accompaniment and the fixed media plays chord patterns in high mallet percussion sounds. A complex harmonic progression leading into a recurrence of the main theme a minor third lower than before. At measure 67, an electric organ starts a new texture with very frequent and regular syncopation in both parts. The electric guitar returns to the foreground in measure 100, which leads into the coda, a series of statements of the main motif.

Title: *Brothers in Arms*

Composer: Michael Kallstrom (b. 1956), United States

Publisher: unpublished

Dates: written 2008

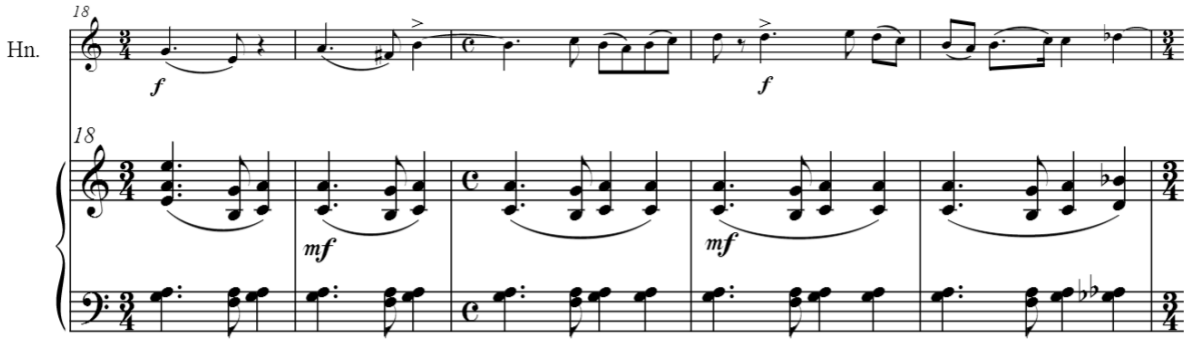
Format of Horn Part: metered score

Duration: 8'30"

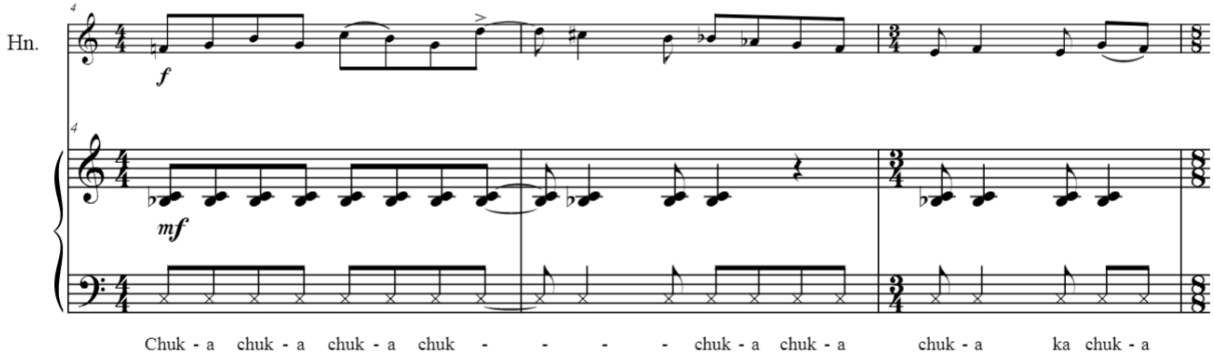
Difficulty Level: II Talented high school student

Extended Techniques: none

Range: f-a$^{\flat}$"



Example 22: mov. 1, mm 18-22, homophonic texture



Example 23: mov. 2, mm 4-6, “Chuk-a” accompaniment

Notes: Like *Eastern Brilliance* and *Around the Clock, Brothers in Arms* was written for Paul Basler. The accompaniment consists of percussion sounds, wordless male voice, synthesized sounds, a clock-like noise, piano, vibraphone. This work is definitely the easiest to perform of Kallstrom’s three works for horn and fixed media. At just over two octaves, the range of the horn is appropriate for an advanced high school student, and the melodies are singable, with only a few notes faster than moving 8th notes. *Brothers in Arms* is divided into two movements: Andante and Allegro.

The Andante establishes consonant harmonies starting in the four-measure fixed media introductory phrase. These measures also contain the rhythmic ostinato that plays during the majority of the movement: a dotted quarter note, 8th note, and quarter note. Major seconds commonly occur in these chords, with g+a being by far the most common when this pattern recurs in the bass clef. When the meter changes, this recurring pattern changes slightly by eliminating the last quarter note in 2/4 measures and adding an extra quarter note in 4/4 ones. The horn generally plays similar rhythms to the fixed media, which creates a largely homophonic texture (example 22). Until measure 15, both the horn and fixed media play quiet dynamics.

After the crescendo in measures 14-17, both instruments play a louder variation on the melodic material from the beginning. Parallel sixths become prominent in the fixed media, which is a reduction of the chords in the first section that contained parallel sixths. However, these parallel sixths are much more active, compared to the dotted half notes. During this section, the horn plays more accidentals than on the previous page.

Kallstrom writes frequent accidentals, so stating that the movement is in A minor would not be completely accurate. The harmonically complex chords contain four or five notes that are not used functionally. This treatment of the harmonic language shows Kallstrom's background in popular music. Following irregular phrases at different dynamics, the horn reaches a climactic g#", the recorded voice becomes much more prominent than it had been in the opening section, and the clock-like percussion sound continues.

As the horn plays a brooding melody in the middle range, the fixed media plays a tense ostinato in measures 57-64. The synthesized chords change timbre in measure 65; they become mellower as the horn plays gentle melodies. Following a cheerful solo for the fixed media, the material from the beginning returns in measure 83. In measure 91, it diverges from the opening music and meanders to the end. The final statement from the horn is a jump of a sixth, which leads to a non-conclusive final chord of concert G, A, and C#.

The cues at the beginning of the second movement are marked "voice" and "chuk-a chuk-a chuk-a…" (example 23). Although the sound is more like a percussion instrument, it is actually a heavily modified recording of Kallstrom speaking.[15] This syncopated line at the beginning is a rhythmic motif for the whole movement. Syncopations are common in both the horn and accompaniment, and the meter frequently

[15]Natalie Jo Adcock, "Michael Kallstrom's Works for Horn and Piano or Electronics: A Pedagogical and Performance Guide" (DMA diss., University of Alabama, 2016), 53-54.

changes. For the most part, these meters are quarter-note based, but the unusual meter that commonly recurs is 8/8. Kallstrom divides these measures into 3+3+2. He creates continuity with the first movement by introducing major seconds in measure 4, which play with a similar timbre to the mallet percussion in the first movement. At that moment, the horn enters with a lively syncopated line.

Like the first movement, the horn line generally fits closely with the rhythm of the accompaniment, but in measures 21-27, the horn plays a line while the accompaniment has rests. Because this passage is not intuitive with how the fixed media and horn line up, playing off the score is helpful. The two parts continue to interact over a wide dynamic range until the modified voice returns in unison rhythm with major seconds in measure 49. In measure 52, the horn plays a subito piano line that grows until the fixed media has a subito pianissimo in measure 63. The horn plays an expressive duet at a soft volume until the fixed media line transforms into marked, syncopated chords. In this section, the horn plays a locrian scale and melodies that are variants on the opening material. Syncopations remain common in both lines. The climax of the piece builds with the rhythmic motif, which starts again in measure 135 and includes more modal scales starting on g in the horn. In measure 145, the fixed media fills out considerably in both texture and volume. After both instruments play dramatic lines, a fixed media transition leads to a coda in measure 156. This passage takes elements previously heard during the movement and finishes with a loud concert C major chord.

Title: *Eastern Brilliance*

Composer: Michael Kallstrom (b. 1956), United States

Publisher: unpublished

Dates: written 1993

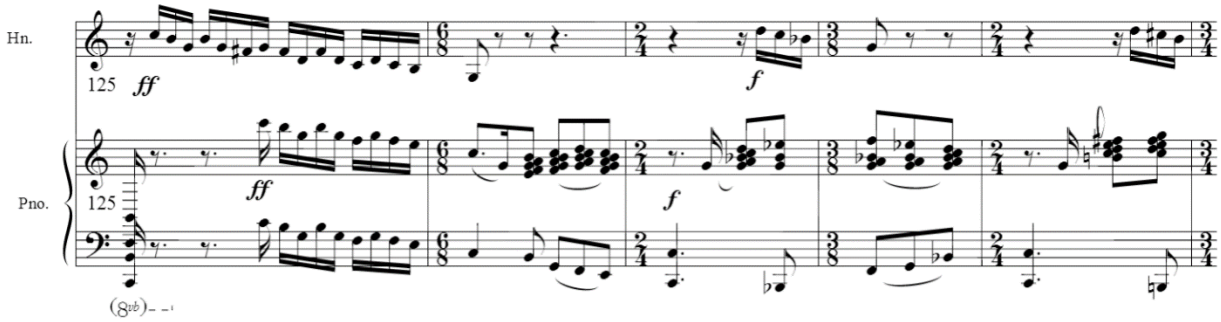
Format of Horn Part: measured score

Duration: 16'30"

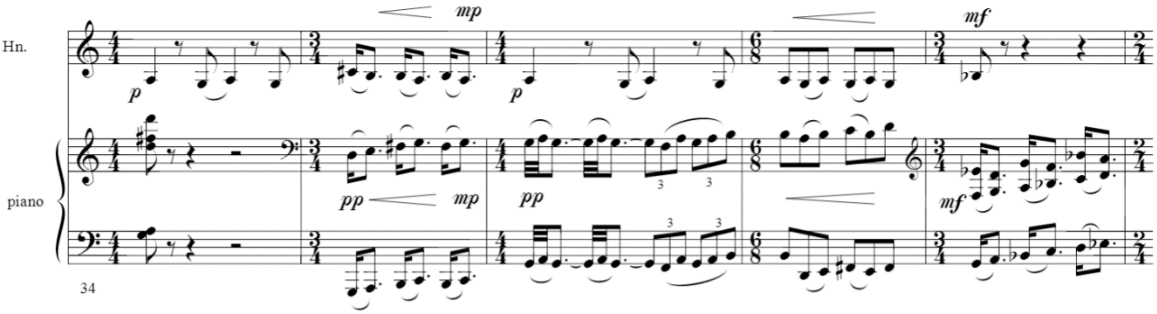
Difficulty Level: III Undergraduate performance major

Extended Techniques: stopped horn

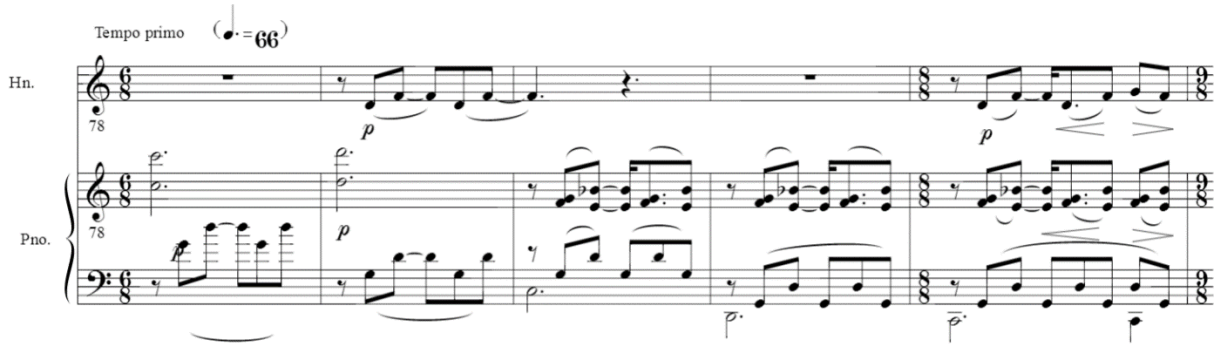
Range: c-b$^{\flat}$"



Example 24: mov. 1, mm 125-129, 16th note motif



Example 25: mov. 2, mm 34-38, several rhythmic motifs



Example 26: mov. 3, mm 78-82, melodic motif

Notes: This is Michael Kallstrom's first work written for horn and fixed media, and at 16.5 minutes, it is the longest. Originally, *Eastern Brilliance* was composed for horn and piano, and both versions were written for Paul Basler.[16]

The first movement starts with a 16th note motif that is repeated throughout the movement (example 24). This musical idea starts on the second 16th note of the beat, so the motif sets the funky character for the movement through countless syncopations. The meter changes frequently through a variety of time signatures. Although the texture of the accompaniment is relatively thin, the harmonies are frequently thick, through the common use of major seconds and non-tertian chords. Instruments in the fixed media include heavy utilization of electric bass, a variety of synthesized noises, vibraphone, bells, and chimes. The horn part frequently dialogues with the fixed media; some ideas are played together, but others are presented as solos in the horn.

[16] Natalie Jo Adcock, "Michael Kallstrom's Works for Horn and Piano or Electronics: A Pedagogical and Performance Guide" (DMA diss., University of Alabama, 2016), 19.

Overall, the second movement is more dissonant than the first. Rhythms of 16th dotted 8th rhythms, as well as dramatic pickup 8ths to quarter notes on beats one and three, are common motifs in this movement (example 25). The combination of these two traits, in conjunction with the bass guitar and harsh synthesized pitches, creates a stark aesthetic. Dotted 16th-32nd note embellishments are also common in the horn part. Most of the other instruments used in this movement are synthesized sounds. Like the first movement, the meter changes frequently between an assortment of time signatures.

The one instance of an extended technique occurs between measure 34 and 38. Kallstrom calls for the hornist to use a stop mute, which is an astute choice, considering the difficulty of hand stopping these notes that are just below the treble staff. At measure 56, the character changes to a rock feel when the tambourine and bass guitar enter and the tempo changes. The initial character of the movement returns in measure 72, as a coda of sorts.

At the beginning of the third movement, the main rhythmic motif is introduced in the fixed media (example 26). The synthesized sounds at the beginning are less brash than those heard in the previous two movements. Instruments typical of rock music, such as guitar and percussion, are still heard in this movement, but in a subservient role to the ethereal synthesized sounds. As with the first two movements, the meter changes frequently in the third movement but favors triple meters more than the other two. Harmonies are non-tertian and aesthetically similar to those in the other two movements, but they are not connected to those specific harmonies. The horn writing alternates between melody and accompaniment with the fixed media. Like the previous movements,

the horn stays within a comfortable range. The writing is fairly uncomplicated, save for a few runs, such as in measures 112-114. One peculiar trait of this movement is abrupt shifts in accompaniment character. For instance, there is a jarring change in choice of synthesized sounds from measure 77 to 78. The effect comes across as some of the ideas being disconnected. Nevertheless, this movement (and the piece as a whole) has many wonderfully original musical ideas.

Title: *Metropolis*

Composer: Christien Ledroit (b. 1975), Canada

Publisher: Canadian Music Centre

Dates: written 2006, revised 2008

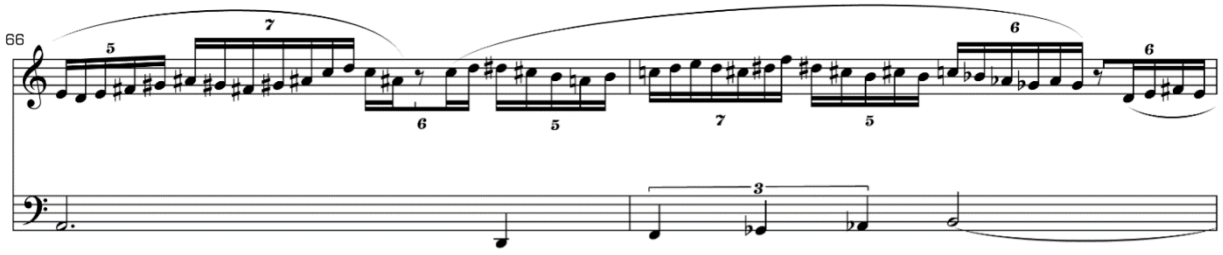
Format of Horn Part: measured score with timing cues

Duration: 10'

Difficulty Level: V Virtuoso

Extended Techniques: mute, indeterminate pitches, pitch bends, bell up, multiphonics, bell positioning, possible improvisation

Range: D-e$^{\flat}$'''



Example 27: mm 66-67, complex horn line

Notes: Ledroit's background is strongly apparent in this work: he played guitar in a punk band, as well as studied violin. According to his biography, he "maintains active interests in studying and performing both contemporary art music and loud aggressive rock music."[17] In an email, Ledroit stated that the work deals with the theme of individual

[17]Christien Ledroit, "christienledroit," accessed April 5, 2017. https://cledroit.wordpress.com.

versus the masses, and the inspiration was the sounds of an urban landscape. He also stated that the sound in the fixed media at 4'14" is a sonogram recording, taken during the composition of this work, of his daughter's heartbeat while in utero. Ledroit wrote, "It changed the direction of the piece. I suppose that's a metaphor for what a new baby does to one's life."[18]

The work is divided into a series of unmarked caricatures, of which some are metered and some are not. Sections without meters show the art music influence on Ledroit, and the metered sections mostly feature distinctive rock rhythms and harmonies. The unmetered sections tend to give expressive liberty to the performer. Much of the rest of the accompaniment is made from synthesized whines, crashes, and other mechanical sounds. However, guitar and complex drum beats are prominent during the aggressive rock outbursts. Although the piece is metered, the author suggests using a stop watch to judge timing on the free sections.

Metropolis begins with a mechanical glissando and six drum hits in the fixed media, followed by an ascending line and repeated a"s in the horn. After a rest, the horn and fixed media play a homophonic line marked "not exact sync with audio, but close" in measures 5-7. While the exact figure does not repeat, it does set up the harmonies and style that are used throughout the work. Whole tone scales, melodic major sevenths, and [0,1,2] patterns are very common throughout the piece. A whole-tone cluster chord opens

[18] Christien Ledroit, email to author, March 13, 2017.

the first free section for the horn, in measure 9, where the performer is given the freedom to improvise on the written line to fill 20 seconds. The next caricature begins with the horn playing lone notes while the fixed media quietly plays a rock rhythm in 4/4. In measure 16, the same rhythm is repeated in the boisterous electric guitar, while the horn plays a different melody.

In measure 20, the horn has an unmetered solo that lasts for over a minute. The player should play this passage slowly and dramatically to fill the entire timespan. In measure 23, the horn is muted, which matches the muted quality of the hurdy-gurdy counterpoint. No instruction is given to un-mute the horn, but measure 39 appears to be the logical spot. A complex drum beat is added in measure 32, which continues into measure 39, as synthesized sounds replace the hurdy-gurdy. The fixed media plays a solo from measures 48 through 54 based on the main melodic material. Following a repeat of the opening hits, the sonogram recording returns and some trills for the horn are played, and then the fixed media plays another solo. When the fixed media's reprise of the hurdy-gurdy material ends, the horn leads into the most technically challenging section of the work (example 27). It is a rhythmically active line that consists of irregularly arranged 4,5, 6, and 7 tuplets, with atonal jumps, while the fixed media plays dramatic chords. This section segues into a loud rock passage.

When the hard rock section ends, the horn plays improvised-sounding snippets over the sounds of unintelligible voices, which lead into measures 98-100, where the player is given the freedom to improvise on the written line. Quiet, mechanical noises are heard in the fixed media with occasional outbursts. A male voice crescendos into six

percussion hits, followed by a downward guitar glissando, while a high pitched whine is played. The horn plays loud quarter notes, followed by a flourish of notes leading to more hits with the fixed media. A climactic note is played by the horn marked "*ffff* as high as possible with room to gliss. bend and cresc right to audio crash at 10:58 (overlap crash slightly)." While the sonogram recording re-enters, the hornist plays multiphonic notes, while turning his or her back to audience and "leaning back as a far as possible" on the middle one of each set of three notes.

Title: *Thermal Bloom*

Composer: Jason Holt Mitchell, United States

Publisher: unpublished

Dates: written 2014

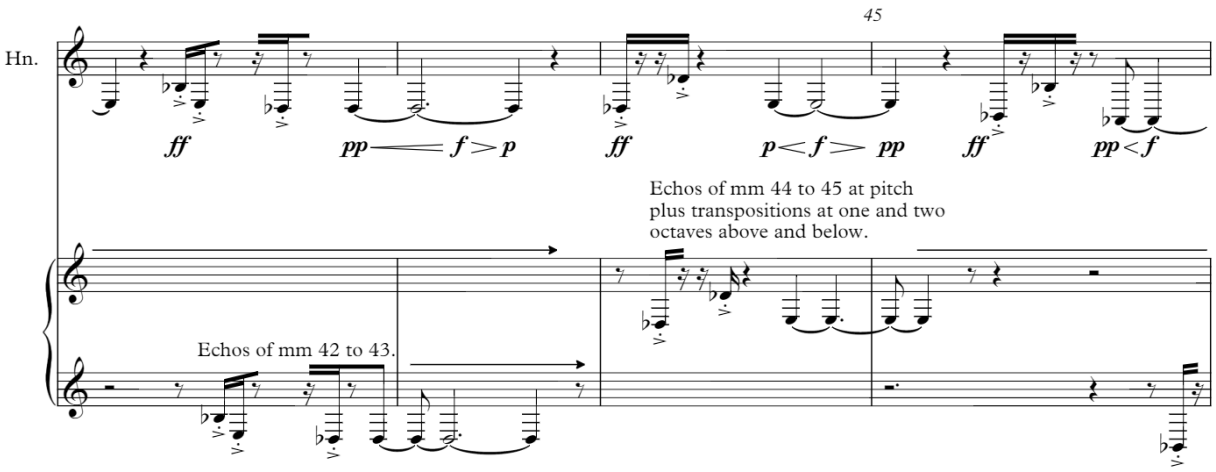
Format of Horn Part: measured score

Duration: 5'30"

Difficulty Level: IV Graduate performance major

Extended Techniques: none

Range: $e^{\flat}$-g"



Example 28: mm 42-45, punctuated 16th notes

Notes: Mitchell writes in the program notes, "*Thermal Blooming* is an atmospheric effect that is seen in the use of high-energy lasers. As the laser passes through the atmosphere, a thermal distortion effect occurs." He used a pitch and proportion square, called a *Cascarones Square,* to compose the work, and the result is atonal. The range of the piece is comfortable to play. Mitchell has the horn part notated in

C in the score, which is a bit awkward to read, but he has an easier-to-read performance part in F that was used for the premier.[19]

The work begins with a long tone line in the horn with slow-moving, non-tertian chords in the fixed media. At rehearsal A, the motif of a loud 16th note followed by a soft longer note a major second away is presented in both the horn and the fixed media. This motif builds until measure 12, when the horn starts playing 32nd-note flourishes, while still maintaining the sudden and frequent changes between loud and soft notes. The chaotic outbursts in the fixed media give way to slow, sustained notes in both the horn and fixed media by rehearsal B. For the most part, the accompaniment consists of electronically distorted sounds of brass instruments. The density of sounds varies greatly throughout the work, but the texture is generally thin.

Trills are introduced as a motif at rehearsal C, and they occur in both the horn and fixed media. One quirk of this passage is that some of the trills are intended to slow down at the end and others are explicitly instructed to maintain a constant speed. In measure 40, the last motif of the piece, punctuated 16th notes in non-metric patterns, is introduced in the horn (example 28). These are all loud and often juxtaposed with swells or quiet long notes. In the same style as the rest of the work, the accompaniment plays these ideas at random-sounding rhythmic intervals and octaves. The piece ends with the horn and fixed media playing sustained notes and the horn part holding longer than the fixed media.

[19]Jason Holt Mitchell, email to author, March 28, 2017.

Title: *The Golden Echo I*

Composer: Thea Musgrave (b. 1928), Scotland

Publisher: Novello & Co.

Dates: written 1987

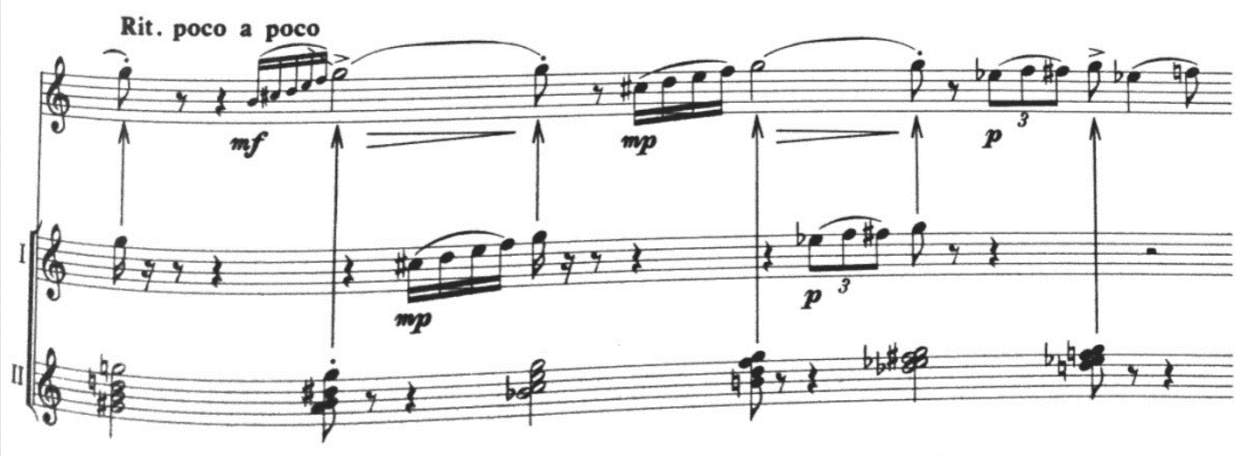
Format of Horn Part: unmeasured score

Duration: 13'

Difficulty Level: V Virtuoso

Extended Techniques: timbre changes using valves, stopped horn

Range: B-c'''



Example 29: page 5, imitative line in both parts

Notes: According to the program notes, the work was commissioned in 1986 by the International Horn Society. The accompaniment from *The Golden Echo I* is made entirely of synthesized horn sounds. For this reason, it was later adapted into *The Golden Echo II*, for solo horn and horn ensemble with sixteen parts.

The soloist is granted a great deal of freedom in this work, as the only moments when the horn and fixed media should line up are indicated by arrows. Outside of those specific points, the player is allowed considerable rubato. At the beginning, the horn line is accompanied by an almost-inaudible phrase before the first arrow appears. From the first few phrases, the piece establishes the nature of the dialogue between the horn and the fixed media. The piece gets its name from the way that the lines echo each other. However, these echoes are rarely exact repeats. For instance, the fixed media's first phrase contains a few more notes than the horn phrase. Within the first 20 seconds, the atonal sound environment is established, and from the first phrase, periodic grace notes appear as a motif. The piece intensifies with crescendi and increasingly active lines in the horn, until the piece reaches a brief climax at the top of page 3.

Following a quieter section that is based around the opening phrase, the work takes on a more aggressive character at the top of page 4. On page 5, the horn and fixed media more directly imitate each other with loud, connecting flourishes that relax into a slow section (example 29). This passage, marked Doppio movimento, features quarter note triplets that utilize a variety of fingerings for g's, which change timbre as a result. After an ascending line, there is a passage in a similar style that creates a melody with quarter notes. The piece continues melodic excursions over a complex and generally unrelated fixed media texture. These ideas slow down and descend into the horn's lowest range of the work on page 13.

The stylistic traits of complex atonal textures, no sense of meter, and grace note outbursts continue until the opening phrase is re-introduced at the top of page 19, at

various transpositions. Stopped horn is utilized for the first time at the bottom of that page, and the last note of the horn is played with a mute, which quietly holds past the end of the fixed media.

The piece presents one particular performance challenge outside of complex lines over the full range of the horn. At the softer volumes, the accompaniment can be difficult for players to hear over the sound of their own playing, which can create issues with lining up the parts. This difficulty could be alleviated by creating chronometric notation for this work and indicating when the arrows occur. A diligent performer could create these markings and keep a stopwatch running during the piece.

Title: *Obsession*

Composer: Jody Nagel (b. 1960), United States

Publisher: Jomar Press

Dates: written 2004

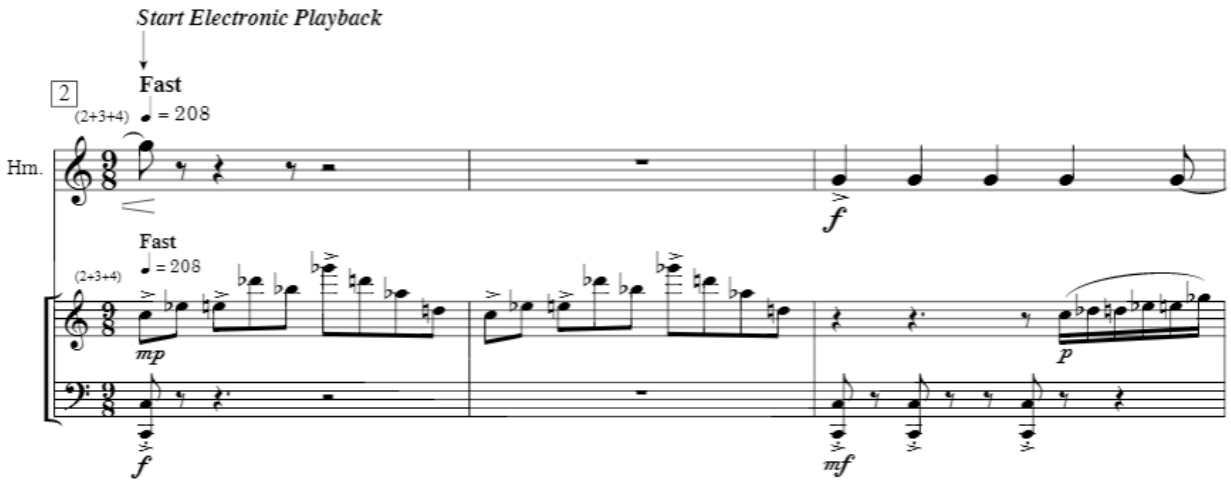
Format of Horn Part: measured score and part

Duration: 4'

Difficulty Level: IV Graduate performance major

Extended Techniques: none

Range: f#-b$^{\flat}$"



Example 30: mm 2-4, recurring fixed media line

Notes: The fixed media for *Obsession* is made entirely from synthesized pitches, which use a variety of timbres. The main motif in the accompaniment is played by an

instrument that sounds like a synthesized celeste. In 2011, Nagel adapted the piece for horn and wind ensemble.[20]

The fixed media version of *Obsession* comes with two iterations of the accompaniment: one at 100% of the tempo and another at 80%. This is a wise choice on Nagel's part because the tempo is incredibly quick. Outside of the first and last measures, the entire work is in 9/8, but by far the most common division of the measures is 2+3+4. However, the performer may find this meter easier to internalize as 2+3+2+2.

The piece begins with a short, atonal, and meandering cadenza for the horn, and launches into the fast main tempo when the fixed media starts. First, the fixed media plays two measures of its recurring one measure pattern (example 30). The measure's harmonic and rhythmic elements are repeated exactly throughout the work. Due to seven of the nine pitches only being used once in the measure, the material sounds like twelve tone serialism.

As part of the main melodic material, the horn plays nine quarter notes over the space of two measures, and a polymetric effect is created. Many of the rhythms in the horn part look confusing, but hash marks can be helpful for showing how they fit into the rhythmic framework. During the fast material, most all of the horn notes easily correspond to the beat pattern. Accents are a common articulation in this boisterous work, and they support the divisional patterns of the measures.

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[20] Jody Nagel, email to author, January 5, 2017.

At measure 44, the tempo is marked “Suddenly Half Speed,” and the pseudo-serial line does not appear in this section. The beat pattern stays the same in this passage of the work, and the chromatic flourishes in the fixed media continue in the same style as the first section, though more frequently. The horn’s line in this passage contains more notes that occur off the beats, which are easier to play at the slow tempo. After the first measure, this entire section has a molto accelerando into the return of the first tempo and material at measure 74. At measure 93, a gradual ritardando occurs in a similar fashion, until the sudden return to the first tempo at measure 123. The fixed media’s opening line is repeated at various transpositions, while the horn plays lyrical, atonal lines. The work concludes with a short cadenza that is a retrograde, though not exact, version of the opening passage.

Title: *Soundings*

Composer: James Naigus (b. 1987), United States

Publisher: self-published at jamesnaigus.com

Dates: written 2013

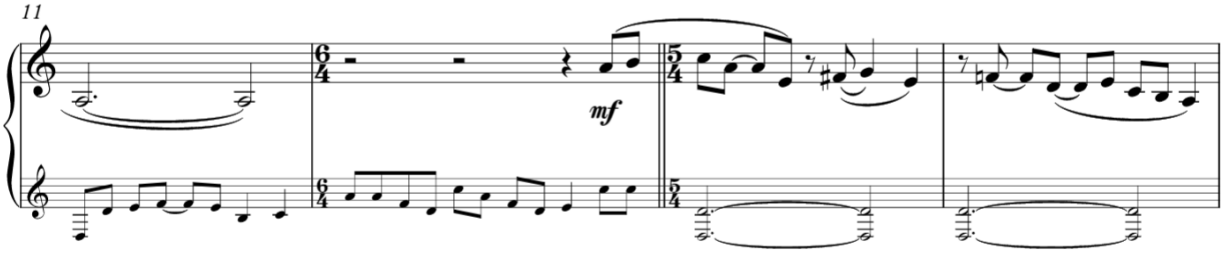
Format of Horn Part: measured score

Duration: 3'30"

Difficulty Level: II Talented high school student

Extended Techniques: none

Range: g-g"



Example 31: mm 11-14, active, syncopated horn line

Notes: Naigus wrote this work for his former professor, Jeffery Agrell. Two versions of this piece exist: one to be played as written and another with an extra section for improvisation. Primarily, the accompaniment is provided by the sound of a Hang, which is a Swiss drum – similar to a steel pan. This is a surprisingly new instrument, and

it was first prototyped in 2000.[21] The majority of the piece is in 5/4, and the Hang provides an ostinato that makes up most of the accompaniment.

At the beginning of the work, the harmony, established by the Hang, is best described as D Dorian. The combination of an exotic-sounding instrument and modal harmonies with a 5/4 groove create a unique aesthetic. The horn enters in measure 5 with a low and slow-moving melody, which turns into an active, syncopated one in the pickup to measure 13 (example 31). Overall, the horn line alternates between sustained passages and active, fluid ones. Generally, the accompaniment is easy to follow, but the beat becomes less clear from measures 21 through 28.

While the Hang is the main fixed media instrument, other sounds in the accompaniment include Naigus playing his horn[22], cymbal, voices, vibraphone, bass drum, and other drums. The texture is fairly consistent, but relatively thin. For instance, no more than three of these sounds are heard at any single point. When the horn enters in the fixed media in measure 32, it creates an interesting effect between the recorded major second harmonies and the soloist.

The Hang is replaced by a quiet drum in measure 46, while the soloist plays a melody that contains more quarter note rests than the previous material. Recorded mallet percussion has a solo before the soloist and the recorded horn play another harmonically

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[21]David Kuckherman, "the PanArt Hang (drum) and Handpans - World Percussion," accessed March 3, 2017, http://worldpercussion.net/instruments/panart-hang-and-handpans/.

[22]James Naigus, email to author, Oct 27, 2016.

ambiguous duet at measure 62. Over the sound of the wordless voices, hang, and drum, the soloist is then the primary voice. After this solo, the texture from the beginning of the piece reemerges, while the soloist plays fragments of the previous material, and then the Hang ends the work with three notes.

The work does not present significant technical challenges to a hornist who is at least a talent high school student. The range does not venture into any extreme ranges, and outside of the frequent ties in the melody, the rhythms are relatively simple. There are also no extended techniques to tackle for this work, which could make it a good first piece for a student to play in this medium.

Title: *Turnabouts*

Composer: Israel Neuman, United States

Publisher: self-published at israelneuman.com

Dates: written 2008

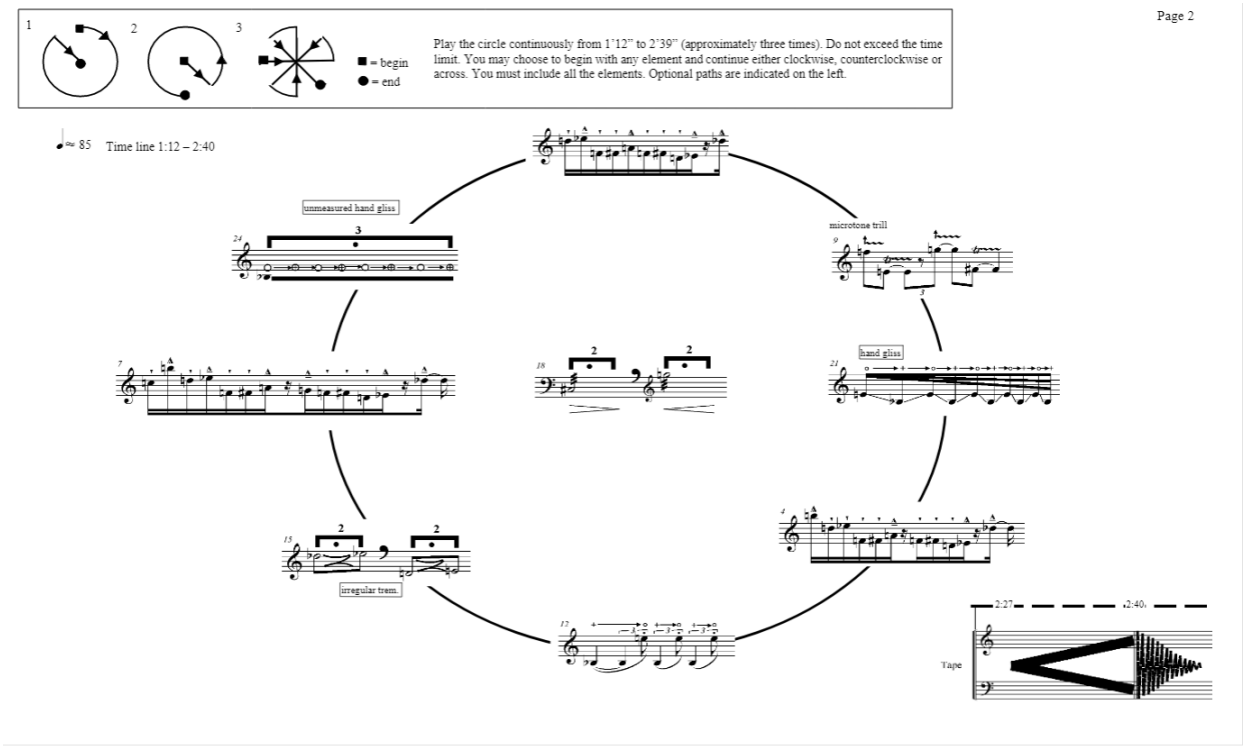
Format of Horn Part: chronometric score

Duration: 8'

Difficulty Level: V Virtuoso

Extended Techniques: hand glissando, stopped horn, glissandi, tremolo, flutter tonguing, microtones trill, verbal commentary, tapping, air sound, kisses into mouthpiece, buzz mouthpiece into bell

Range: E-d'''



Example 32: page 2, first semi-aleatoric section

Notes: *Turnabouts* won an Honorable Mention in the International Horn Society's 2009 Composition Contest. Neuman states in the program notes, "The premises of *Turnabouts* are rooted in the perception of music as a transformation of energy. ... Systematic organization of extended techniques, which are manipulated through various matrix operations, forms the fundamental structure of the piece." Lines are occasionally placed on the score for specific moments when the horn and fixed media should align, but they are largely independent otherwise.

While *Turnabouts* is written for horn and fixed media, the piece benefits from amplification of the horn due to the prevalence of quiet extended techniques. These include frequent air effects and vocalized noises, and the chaotic noise of the fixed media easily overwhelms those delicate sounds. The horn begins the piece before the fixed media starts, so an operator is needed to start the playback and a stopwatch. After building tension on partially stopped notes of increasing speed, at the moment that the fixed media begins, the hornist is instructed to "inhale hysterically." According to the program notes, the sounds on the fixed media are "derived from audio recordings of the horn's extended techniques." However, the majority of the sounds are unrecognizable as horn sounds and come across as synthesized effects. They are played in an unpredictable fashion, with regards to timbres, rhythms, and pitches. The horn plays a variety of dramatic extended techniques, with no sense of a tonal center on the pitched effects.

From 1'12" to 2'40", the hornist plays the first semi-aleatoric section (example 32). Nine short, seemingly unrelated ideas are arranged in a circle, with one in the

middle, and the soloist is instructed to follow play each idea in a progression around the circle. The whole cycle will occur approximately three times. During this time, the fixed media plays otherworldly electronic swells, which crescendo at the end of the section as a transition. This method of composition provides an interesting form of repetition which is not heard during the normally written portions of the work. However, the abstract quality of the ideas may cause the repetition to be lost upon audience members without access to the score. The new section at 2'44" uses gentler sounds in the horn part, such as singing into the horn and tapping the bell. Dissonant, non-functional chords occur below these techniques and do not line up strictly with the horn part.

At 3'37", the hornist is instructed to use the novel technique of buzzing sirens into the bell of the horn, which meshes with the buzzy texture of the altered horn effects in the fixed media. This passage poses the challenge of a quick change between playing normally and buzzing into the bell. Thus, the author suggests keeping an extra mouthpiece on the stand to quickly pick up for this passage. The horn plays an unaccompanied solo at 4'00", and this is one of two moments in the piece that has meters; the other, at 6'02", is also an unaccompanied solo for the horn.

Following more assorted extended techniques, the piece enters a second circular, semi-aleatoric passage from 5'06" to 5'56". This passage features different musical ideas and extended techniques, but players again have the freedom to move in the progression clockwise or counter-clockwise, starting wherever they please. After the second unaccompanied metered solo, the fixed media and horn continue to play a variety of unusual sounds that come across as random in their relation to one another. At 7'38", the

fixed media ends, and the horn plays a solo to end the piece. This final passage releases energy in a way that is opposite of the way it builds in the opening line.

Title: *Coming Home*

Composer: Matthew Nicholl, United States

Publisher: unpublished

Dates: written 1994

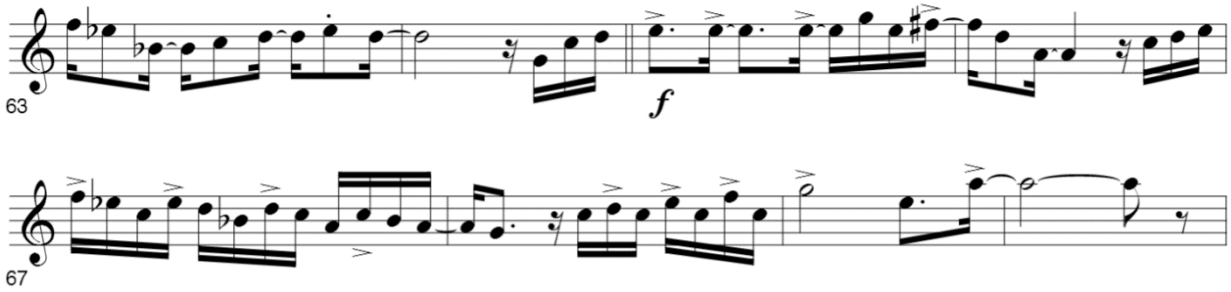
Format of Horn Part: metered part

Duration: 3'30"

Difficulty Level: III Undergraduate performance major

Extended Techniques: pitch bends, glissandi

Range: c-a"



Example 33: mm 63-67, active horn line

Notes: Matthew Nicholl has had an active career in commercial music, composing scores for projects for NASA, US Postal Service, Subway Sub Shops, Ronald Reagan, and others.[23] A more famous version of *Coming Home* has been recorded by the Dallas

[23]Matthew Nicholl, "About," accessed May 6, 2017, http://www.matthewnicholl.com/Bio.html.

Brass on their album *Windborne*. The solo part on that version was played by an alto trombone because the quintet was missing a hornist at the time.[24]

The piece begins with a fixed media introduction that comprises two four-measure phrases, where the second is an embellished version of the first. The harmonies are consonant jazz chords that tonicize concert F, played by mellow synthesized instruments and percussion. The horn enters in measure 9 with a simple melody that is constructed from two four-measure phrases. After another set of two double phrases, the horn plays a version of the theme that incorporates triplets, while the brass instruments enter in the fixed media. The soloist line becomes more complex, through a greater number of syncopated ideas, and then the fixed media plays an eight measure solo, which features the trombone and muted trumpet.

The horn re-enters with an exact repeat of its previous melody, including the fixed media material. At measure 57, the horn part, marked “freely,” becomes considerably more active (example 33). In the sixth measure of the second eight-measure phrase, the piece reaches a climactic a" in the horn part. From here, the texture thins out as the soloist’s part simplifies and the initial fixed media material returns. The brass instruments return for the final chord with the soloist to end the piece. This short, accessible work presents few playing challenges outside of potentially unfamiliar jazz/pop rhythms.

[24] Matthew Nicholl, email to author, January 6, 2017.

Title: *Impromptu*

Composer: Matthew Nicholl, United States

Publisher: unpublished

Dates: written February 1992

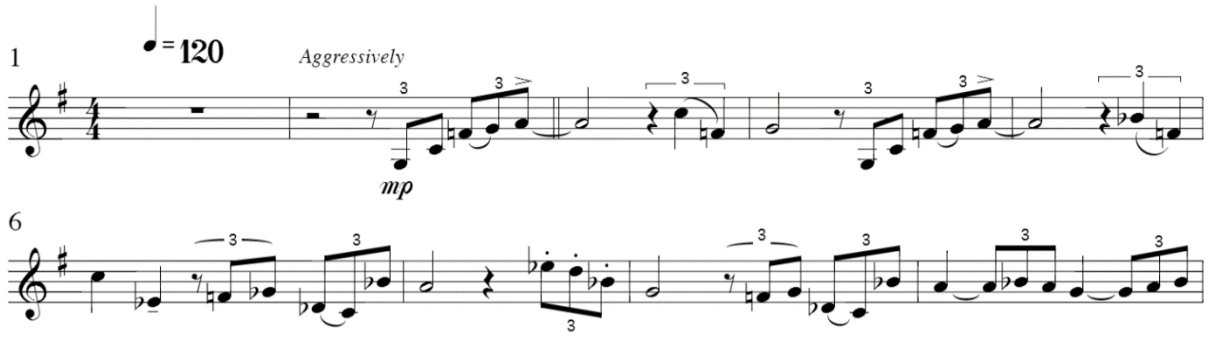
Format of Horn Part: measured part

Duration: 7'30"

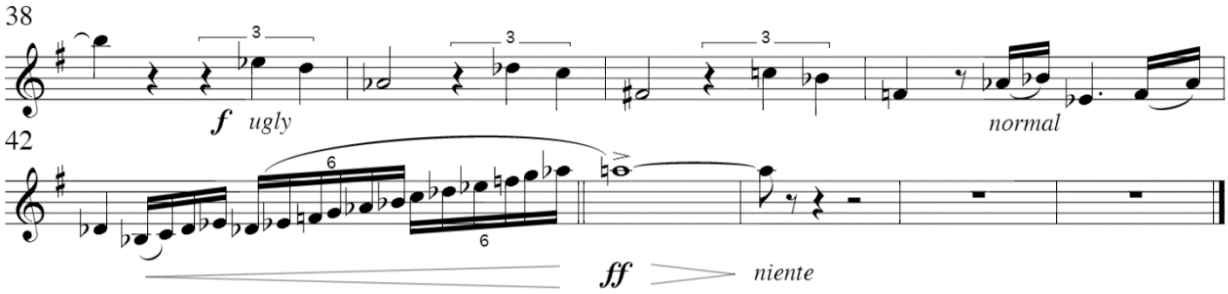
Difficulty Level: IV Graduate performance major

Extended Techniques: glissando

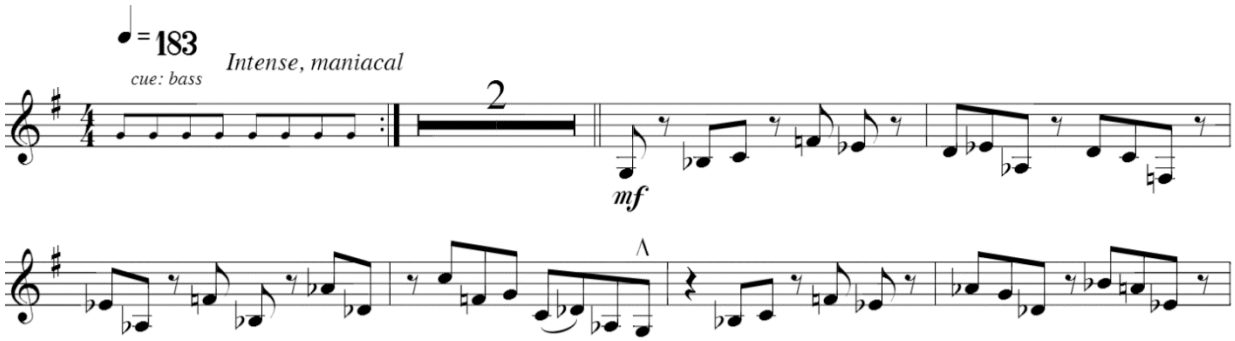
Range: f-b♭"



Example 34: 1st mov. mm 1-9, frequent ideas starting on second triplet



Example 35: 2nd mov. mm 38-46, “ugly” quarter note triplets



Example 36: 3rd mov. mm 1-9, fast eighth note line

Notes: This work was commissioned by Paul Basler.[25] In the first movement of *Impromptu*, more cues would be helpful to the performer. For instance, the movement begins with relatively unaccented triplets in the fixed media, but without cues the performer may incorrectly perceive them as eighth notes. The biggest challenge of the first movement is that the fixed media's motifs mostly occur off the beat and do not directly relate to the horn part. Marked "Agressively," the horn writing is active but singable (example 34).

Instruments in the fixed media include synthesized pitches, cymbals, drums, and mallet percussion. These instruments utilize stereo effects, such as cymbal hits at measure 11 alternating between the left and right channels. In addition to the choice of instruments, the popular music influence is readily apparent in the both the harmonies and rhythms. Nicholl establishes a rhythmic groove that frequently emphasizes syncopations. The harmonies are based on jazz chords and G is tonicized amid the

[25] Matthew Nicholl, email to author, December 22, 2016.

extended tertian chords. In addition, the three major melodic ideas are repeated with variants throughout the work. All of the phrases are either four or eight measures long, and the approximate ABACBCA form is reminiscent of popular vocal music.

The “reflective, relaxed” second movement is considerably easier to line up with the fixed media than the first movement. While the horn part is still independent, the first beat of each measure has a bell chime, which aids in keeping track of the beat. After an introductory drone, the piece starts its two measure ostinato that repeats for the rest of the work. This framework consists of a chime downbeat in each measure, 8th notes that outline minor harmonies embellished with jazz chords, and other percussive noises that vary throughout the work. The horn plays a smooth melody that contains varied rhythms. While small figures are reused in the horn part, it is through-composed.

At measure 19, the harmony transposes until measure 27. When it returns to the original chords, the horn line becomes considerably more active until it reaches a whole note a$^{\flat}$" in measure 35. The climax of the movement comes in measure 43 after a complex run in the horn, which is preceded by quarter note triplets marked “ugly” (example 35). The movement ends quietly just four measures after the climactic a". In addition to the chime, instruments in the second movement accompaniment are bass guitar, mellow synthesized sounds, cymbals, and drum noises.

In contrast to the soulful second movement, the third movement is marked “Intense, maniacal,” with a tempo of quarter note = 183 (example 36). The movement opens with an 8th note based groove created by various percussion sounds, such as cowbell, a synthesized-sounding pitch wobble, hi-hat, in addition to a bass guitar. A four

measure atonal, syncopated line from a synthesized instrument starts in measure 4. Unlike the previous two movements, the horn writing is repeated during corresponding material in the fixed media. The “A” material for the horn mostly consists of driving 8th-note figures that contain suggested syncopation in every other measure. At measure 22, the horn starts the “B” material, which includes smoother 8th note passages for the horn. In the fixed media, a bass groove becomes especially prominent and the percussion ostinato from the beginning stops.

At measure 36, the “C” material, a relaxed chord progression, plays in the fixed media over 8th notes in the cymbal, while the horn continues similar figures from the previous section. Measure 44 reintroduces the “A” material, but a synthesized horn has been added as a counter melody to the horn soloist. “B” and “C” materials are repeated with some extension of harmonic progressions until they segue into the “A” material with the synthesized horn. The piece ends dramatically with a *fff* syncopated 8th note line in both the horn and fixed media.

Title: *Gone to the Other Shore*

Composer: Nicholas Norton (b. 1986), United States

Publisher: Bathysphere Music

Dates: written 2016, premiered by Erika Loke at DC Horn Day 2017

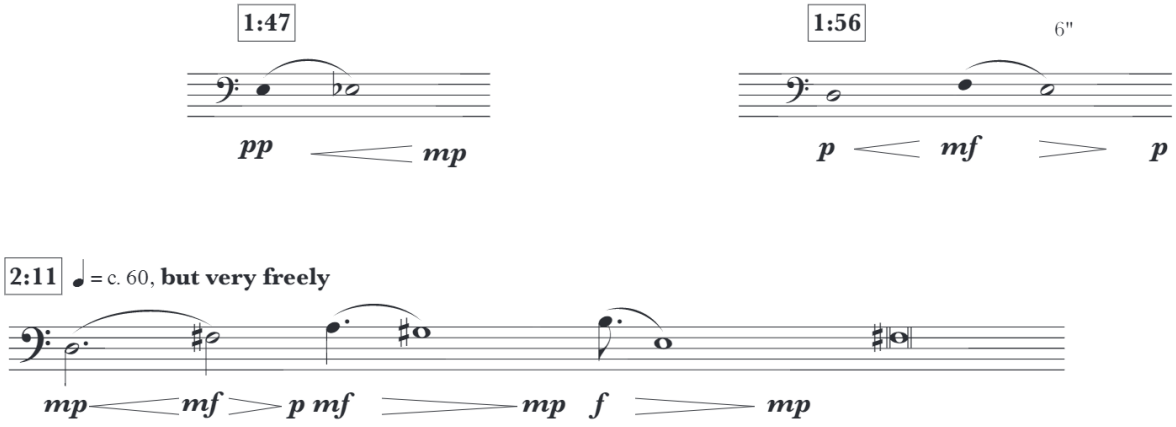
Format of Horn Part: chronometric part

Duration: 8'

Difficulty Level: II Talented high school student

Extended Techniques: half valve

Range: A-b♭''



Example 37: page 1, low melodic fragments

Notes: *Gone to the Other Shore* was commissioned by Erika Loke as part of a Wagner Tuba literature project. The commission was partially funded by the International Horn Society's Meir Rimon Commissioning Assistance Fund. The program notes state that the title comes from the translation of the Sanskrit work "paramitas," which refers to spiritual practices aimed at reducing focus on oneself. Sounds used in the fixed media

include, as Norton writes in the program notes, “Antarctic seal calls, a hydrophone recording of a blue whale singing off the coast of California, the basin of the Caribbean Sea vibrating ... and waves and waterfalls I [Norton] recorded around Iceland.” Although the work was intended for double Wagner Tuba, it is also appropriate to play on horn. The As at the beginning of the work and A♭s at the end of the work are only playable on an F Wagner Tuba, but a single F instrument would not have the necessary facility to play the rest of the work.

At the beginning, the Wagner Tuba imitates the whale sounds with half-valve notes in the lowest range of the instrument. The part gradually becomes more active, and it integrates with the altered waterfall recordings as that enters. These sounds create rich harmonies that persist for the majority of the work. The harmonic language is generally consonant but not in any particular key. The Wagner Tuba line fits into these chords, but the solo part does not stand out from the texture until 2'11", when the melodic ideas start resembling phrases, rather than two-note long tones. Because the solo part is mostly melodic fragments, the part is written with timing cues as they occur (example 37).

At 4'40" there is a metered section, where the Wagner Tuba plays a melody that Norton composed while in Iceland. Norton explained that the rhythmic sound in the fixed media is a sped-up version of wave sounds in the Caribbean Basin that is almost, though not precisely in 4/4.[26] At 5'13", a similar melody to the one at 4'40" is played by the

[26] Nicholas Norton, conversation with author, January 3, 2017.

Wagner Tuba an octave higher and at double the tempo. In this section, the solo part also gets out of the lower range and into the more singing treble range. The harmony is roughly in D♭ during this section. Following the piece's climax on the b♭" after the 6'34" marking, it returns to the lowest range for several whole notes at the end of the work.

Title: Concerto for Horn and Tape

Composer: Tera de Marez Oyens (1932-1996), Netherlands

Publisher: Donemus

Dates: written 1980

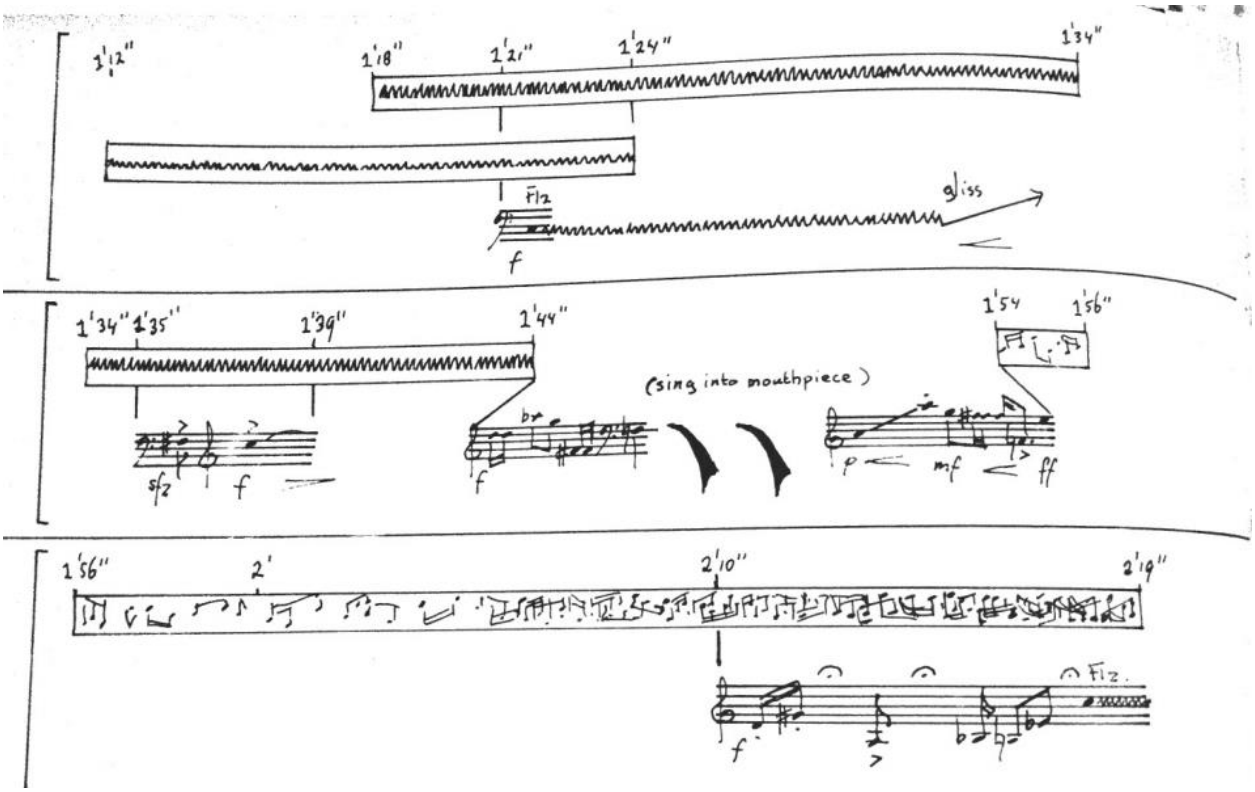
Format of Horn Part: chronometric score

Duration: 15'30"

Difficulty Level: IV Graduate performance major

Extended Techniques: wind tremolo, strike mouthpiece with open hand, mute, wa-wa mute, sing into mouthpiece, varied speed tremolo, flutter tongue, glissandi

Range: $b^{\flat}$-c'''



Example 38: page 2, “sing into mouthpiece” technique

Notes: Oyens writes in the program notes, “The title originates from the work’s structure following to some extent that of the classical concerto for solo and orchestra.” The accompaniment is made from a mix of synthesized sounds and altered recordings of a horn. Because the piece is chronometrically notated, the player will need a stopwatch. One notational issue in this piece is that “muted” notes are denoted using a “+.” While Oyens also calls for the player to use a wa-wa mute, the right hand makes more sense to use during the wa-wa muted sections than an actual wa-wa mute. Thus, “+” passages should be played with a straight mute and wa-wa sections should be played stopped.

The work begins with a thick, low texture of oscillating sounds. Over it, the hornist plays a few atonal melodic fragments. At 0'48", the horn begins a simple dialogue with the fixed media that consists of alternating, slow, and punctuated entrances between the horn and the right channel. The accompaniment transforms into a sound reminiscent of an airplane, and the horn blends with this timbre by playing a long, fluttered c. Between 1'44" and 1'54," the hornist plays the first instance of singing into the mouthpiece, which is notated using curved shapes not on a staff, presumably to denote glissando-like gestures (example 38). At 1'54" a texture is introduced that sounds like several synthesized low brass instruments playing random melodic gestures. The horn incorporates hand stopping, and at 3'00”, the fixed media introduces the recorded sound of a horn playing the recurring melodic line, over the synthesized texture. In the same style as 0'48", a dialogue between the horn and fixed media is at 3'22," this time with flutter tongue in the horn and the low brass texture continuing in the accompaniment. At

4'15", the hornist is asked to play a rhythm using the open palm of the hand on the mouthpiece –something that makes middle school band directors cringe. The hornist is advised to not hit the mouthpiece too hard as to get it stuck in the leadpipe.

At 4'22", a recording of a horn playing multiphonics plays while the soloist performs muted long tones. Oddly enough, the soloist is never asked to play multiphonics at any time – just sing into the horn occasionally. The brass counterpoint texture continues until 5'48", and at this moment, the soloist switches from playing melodic fragments with extended techniques to the vivace melody from 3'00". During this passage, the electronic texture from the beginning of the piece re-emerges, as the horn goes back to playing assorted fragments. In the background, a quiet recording of horn glissandi fades in and out. During this "development" section, little connection exists between the horn and fixed media's materials. Around 9'44", the horn plays fluttered long tones as at 3'22", but the fixed media does not contain articulated notes during this passage. The counterpoint texture re-enters at a higher pitch range at 10'38", and the hornist plays a mixture of glissandi and sung gestures.

The marking "quasi angry" appears at 11'47" for the glissando that appears amid the recurrence of recorded horn glissandi. Random-sounding melodic snippets continue in the solo part over the electronic oscillations. This composite texture continues until the end of the work, when the horn plays a short rendition of the vivace horn melody.

Title: *Bakery Hill Rising*

Composer: Vincent Plush (b. 1950), Australia

Publisher: Australian Music Centre

Dates: written 1980, premiered 1981 by David Stanhope

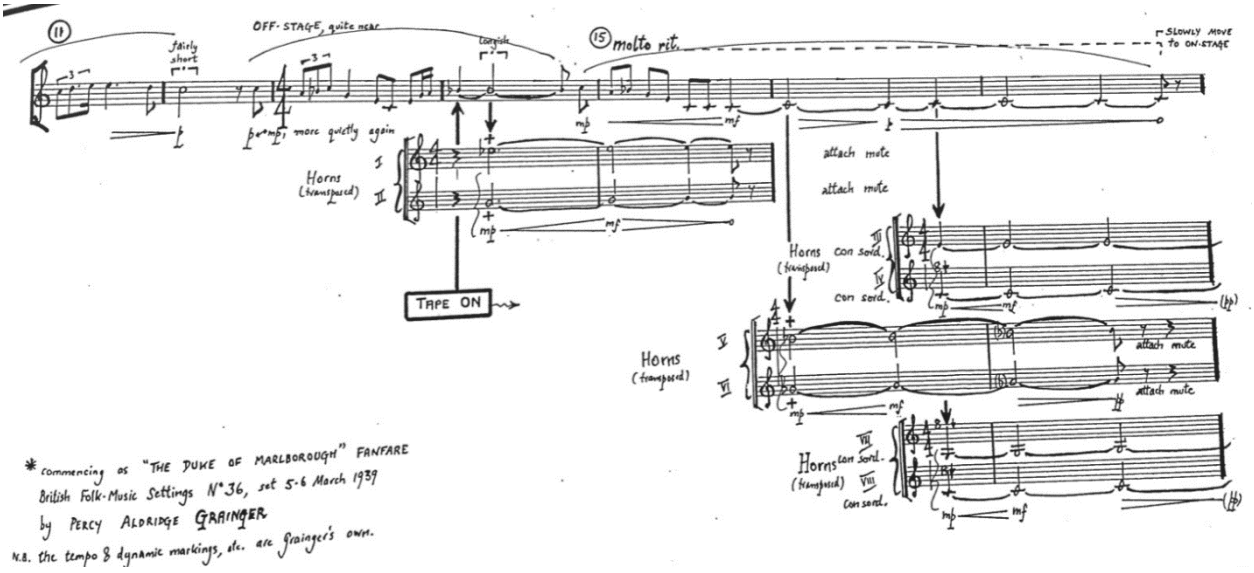
Format of Horn Part: flexible score

Duration: 8'30"

Difficulty Level: III Undergraduate performance major

Extended Techniques: staging, stopped horn, multiphonics, bell up

Range: c-b$^{\flat}$"



Example 39: mm 11-17, accompaniment entrances

Notes: *Bakery Hill Rising* was conceived as both a piece for soloist and fixed media or soloist and horn ensemble. This work was written as a statement of Australian nationalism. In the way that Charles Ives wrote new works based on multiple songs in the

American consciousness, Plush includes Grainger's *Duke of Marlborough Fanfare* and the *Freedom on the Wallaby* as the primary melodic material. The Eureka Rebellion was an armed conflict in Australia, and the oath-swearing meeting prior to it took place on Bakery Hill. Although there is some disagreement among historians, the event was seen as an important moment for Australian nationalism.[27] Plush wrote this work as the opening piece for a concert series of Australian music (primarily celebrating the centennial of Percy Grainger) in 1981, which took place in a venue close to Bakery Hill. On the fixed media, the horn and percussion (a few tam-tam and bass drum hits) parts were played by Peter Luff.

The piece begins off-stage with the hornist distantly off-stage. After an unaccompanied statement of the *Duke of Marlborough Fanfare* theme, the hornist moves closer to the stage entrance and the fixed media is turned on. Once the soloist has moved to the stage, he or she plays the *Freedom on the Wallaby* melody, over a largely static accompaniment of non-functional, muted chords, with occasional echoed fragments of the Grainger theme (example 39). Because the chords do not suggest meter, the soloist can take a fair amount of liberty with the melodies. After the full statement of the folk tune, an animated section begins at rehearsal 52, where the soloist plays virtuosic variations on the fanfare, while the ensemble horns play the *Freedom on the Wallaby*

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[27] Vincent Plush, "Speaking of Music: Vincent Plush, Sept. 4, 1986," interview by Charles Amirkhanian, *Speaking of Music*, KPFA, Sept. 4, 1986, audio, http://radiom.org/detail.php?omid=SOM.1986.09.04.A.

tune in overlapping entrances. The fixed media horns remove their mutes at rehearsal C and play fragments of the fanfare at various intervals. These snippets intensify as each of the six horns plays independent and aleatoric renditions of their short ideas. Meanwhile, the soloist plays a slow melody that is punctuated with fanfare rhythms.

Following the soloist's statement of the fanfare's second phrase with bell in the air, the ensemble horns put the mutes back in. To add to the rustic character of the next passage, Plush requests that the solo horn play as much of the part as possible on the natural harmonics until the end of the work. The soloist plays gentle variants on the *Freedom on the Wallaby*, while the fixed media plays chords in the same style as the beginning. At the very end of the piece, the soloist plays a multiphonic chord while leaving the stage. According to the program notes, the piece should end in total darkness.

Title: *Composition I*

Composer: John Rimmer (b. 1939), New Zealand

Publisher: Sounz.org.nz

Dates: written 1968

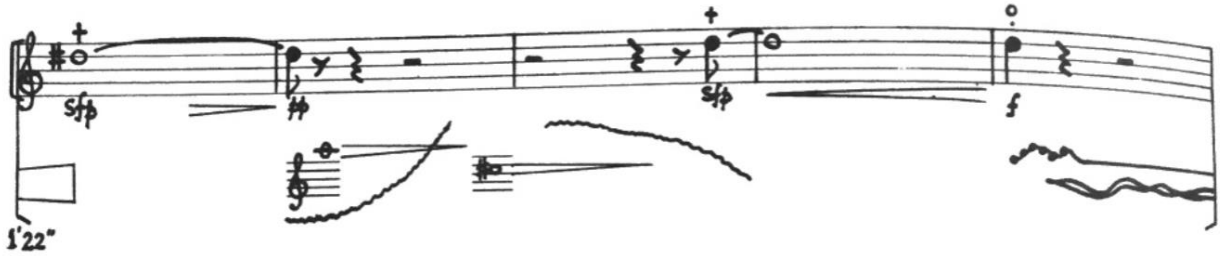
Format of Horn Part: measured score with chronometric cues

Duration: 5'

Difficulty Level: IV Graduate performance major

Extended Techniques: stopped horn, microtones, glissandi

Range: F-c'''



Example 40: 1'22", horn accompaniment to fixed media solo

Notes: John Rimmer's *Composition I* is the oldest known piece written for horn and fixed media. It was composed for the influential Canadian hornist Eugene Rittich. The fixed media was made primarily with synthesized sounds, but it also includes recorded sounds of a piano and gong.

Quarter note = 120 is the printed tempo, but this marking is more relevant to the horn part than the fixed media. Nowhere in the work does the fixed media convey a tempo or meter. When there are rapid passages, such as the opening electronic flourish, they are perceived more as a texture than as a rhythmic statement. Aside from these

outbursts, the accompaniment is generally slow-moving. In contrast, the horn part is agile and declamatory, but it does not convey meter either, despite the work being in 4/4 for the entire piece. Because of the stark differences between the two lines, the hornist needs to be especially attentive to maintaining the brisk tempo.

The atonal, expressionist character of the piece is apparent from the second measure during the opening fanfare, when the rapid, atonal synthesized motif is played by the fixed media against the horn's long notes. Rimmer creates a dialogue between the horn and fixed media, where the electronics comment upon the horn's line and they both play unaccompanied solos. The first of these solos is at 0'20" where the horn plays a dramatic line that contains b$^{\flat}$s and flat b$^{\flat}$s, and the latter are best played open on the F horn.

Around 1'07", the fixed media plays a solo, that is accompaniment by long notes in the horn around 1'22" (example 40). Rimmer depicts the fixed media line in the score using dots, squiggles, and other markings during the sounds with non-specific pitch content, and he writes tiny staves when there are clear pitches. Following the second fanfare in the horn, the piece enters another section where the horn accompanies the fixed media. The long notes change pitch using the right hand, and the best fingerings to use are the F horn fingerings for the open notes. Around 2'54", the horn plays a slow moving melodic passage in the lowest range, which leads to a grand pause in both voices.

The horn breaks the silence with another solo that juxtaposes b♭s with flat b♭s. Following some quiet, simple dialogues between the two voices, the piece ends with the horn alone on a stopped b♭'.

Title: *Tides*

Composer: John Rimmer (b. 1939), New Zealand

Publisher: Sounz.org.nz

Dates: written 1981

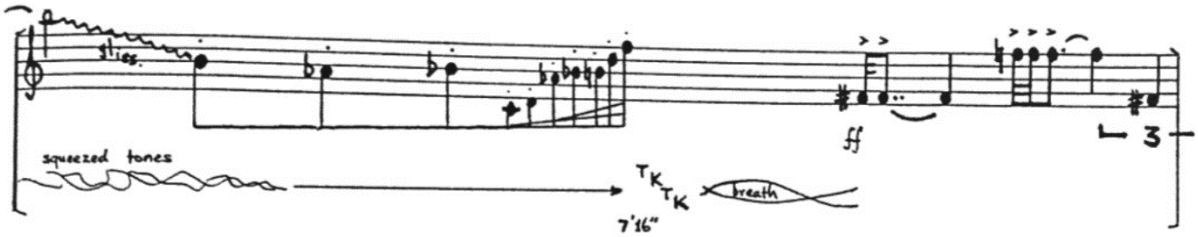
Format of Horn Part: chronometric score

Duration: 10'30"

Difficulty Level: III Undergraduate performance major

Extended Techniques: stopped horn, glissandi, quarter tones

Range: e-b"



Example 41: page 5, horn call

Notes: Rimmer sums up the piece in the program notes: “In a general sense *Tides* reflects the large scale natural rhythms of the tides and their domination on the lives of sea-faring people.” Wave-like dynamic and rhythmic swells are the most important musical elements throughout the piece, and their prominence is accentuated in the absence of discernable meter and tonality.

Performers should note that because sounds start at the beginning of the track, they should start the stopwatch about two seconds before starting the fixed media. The work begins with the recorded sound of turbulent waves crashing on the shore. This

sound gives way to electronic drones, which oscillate and form generally consonant intervals. In the meantime, the horn plays swells, first as long tones and later as long tones with repeated notes that create waves of speed and volume. Around 3'00", the fixed media adds stereo effects to the wave patterns.

At 4'14", the horn plays its first unaccompanied solo. The expressive, albeit still atonal, line provides a stark contrast to the nebulous section that preceded it. Two elements that increase the dramatic character of this passage is the rhythmic crescendi and quarter tones. Rimmer provides a fingering chart at the end of the work for the quarter tones, but he did not include a suggested fingering for flat e♭"s, which ironically are the most common quarter tone note in the piece. An effective fingering is open on the B-flat horn. During the horn's quarter tone trill, the fixed media enters and begins its own, longer unaccompanied solo. This passage contains wave-like synthesized noise and some sort of guitar playing unmetered, chromatic flourishes. The horn provides brief stopped, chromatic long tone accompaniment before it begins its second unaccompanied solo. This line is longer than the first solo, and is also an active line over the range of the treble clef.

The fixed media begins the next section while the horn finishes its solo (example 41). During this portion of the piece, otherworldly sounds are prominent. These are best described as organic-sounding warblings, as it is unclear whether these are synthesized noises or heavily modified recordings. At 7'24", a sound enters that sounds like rapid oscillating tremolos on a horn or trumpet. During these outbursts, the horn plays melodic

fragments. The brass instrument noises turn into recordings of horn glissandi, which are imitated in the solo horn.

Around 8'28", the final section of the piece emerges. This section is defined by sustained notes in the accompaniment and stopped horn chromaticism by the soloist. These notes turn into short phrases that are rich in quarter tones, as the fixed media becomes more sparse. To end the piece, electronically distorted water noises are heard in the fixed media.

Title: *Chugach*

Composer: Cory Ryan, United States

Publisher: self-published at coryryancomposer.com

Dates: written 2013

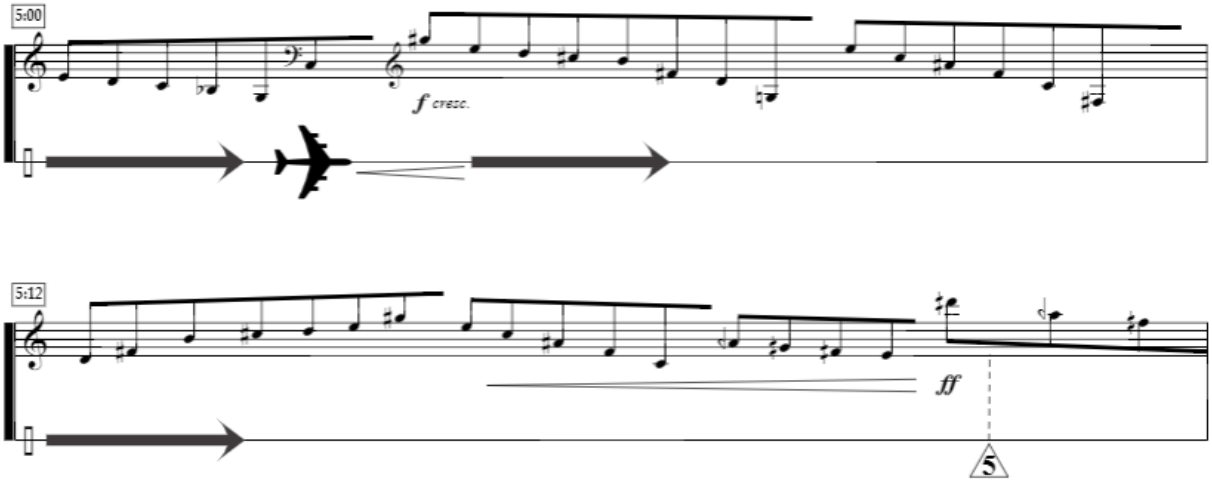
Format of Horn Part: chronometric score

Duration: 9'

Difficulty Level: V Virtuoso

Extended Techniques: stopped horn, flutter tongue, airy sound, “cat purr,” blowing mouthpiece on leadpipe, “dog pant,” speaking letters through horn, right hand pitch bend, echo horn, multiphonics, quarter tones, practice mute

Range: C-d#'"



Example 42: 5'00”-5'23", arpeggio-like line with quarter tones

Notes: *Chugach* was commissioned by soloist Andrew Pelletier, and Cory Ryan created both an interactive electronics version and a fixed media one. The recordings of

nature sounds that appear in the fixed media were taken in the Chugach National Forest in Alaska. Ryan makes heavy use during the work of unorthodox extended techniques to produce various air sounds using the horn. These effects are very quiet and benefit from amplification in the horn.

To begin the work, the soloist plays repeating glissandi with the third valve slide partially pulled out, and the fixed media includes the sound of a horn playing the same thing. Following a “thunder...bees” solo for the fixed media, the hornist plays a mixture of notes in various registers and air sounds, while the fixed media plays horn notes at random sounding time intervals. About ten seconds after water sounds begin in the fixed media, around 1'19", the technique of speaking phonemes through the horn is introduced. This effect is incorporated into the continued texture of the horn line’s interspersing of air effects with assorted traditionally played notes. Meanwhile, the fixed media plays a chaotic mix of nature sounds and quieter horn effects.

Bird and water sounds take over as the dominant features in the fixed media after 2'34" until crickets enter at 3'19". The hornist is tacet until the bird sounds return at 4'20". For the rest of the work, the horn line consists of unmeasured, arpeggio-like 8th note patterns which rely heavily on quarter tones (example 42). The only interruptions to the hornist’s line are two multiphonic notes at 5'36" and one stopped note at 7'34". At 8'00" the horn player inserts a practice mute, something rarely specifically requested in pieces, for the remainder of the work. In the fixed media, the bird sounds give way to the crescendo of an airplane, which transforms into non-functional chords after 5'36", which oscillate slightly over the remaining 3.5 minutes of the work.

While the medium of horn and fixed media is enhanced by this highly creative work, it is the author's opinion that the version of it for live electronics is more compelling. That original version maximizes the impact of the interesting textures in the work by adding the additional variable of a custom patch that significantly alters the horn sound in a variety of ways throughout the work.

Title: *I am - are You?*

Composer: Marie Samuelsson (b. 1956), Sweden

Publisher: Gehrmans Musikförlag AB

Dates: premiered March 8, 2001

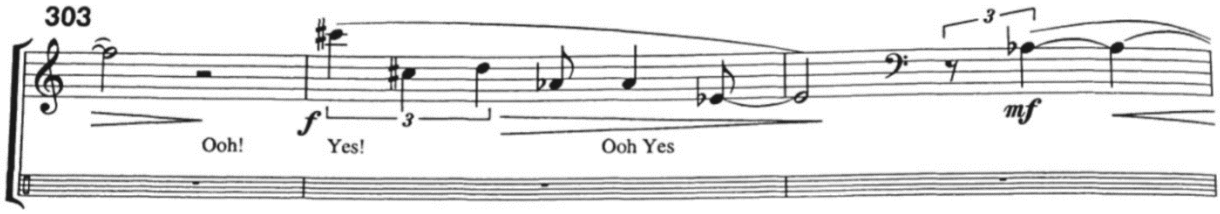
Format of Horn Part: measured score

Duration: 10'30"

Difficulty Level: V Virtuoso

Extended Techniques: air sound, tremolos, hand glissando, flutter tongue, gesture

Range: $a^{\flat}$ - $e^{\flat'''}$



Example 43: mm 303-305, slow moving horn line over whispers in fixed media

Notes: The most significant feature of this work's accompaniment is the poem by Magnus William-Olsson, which is spoken throughout the piece by Dana Johnson, according to the program notes. Text for the poem consists of various combinations of a handful of phrases, spoken in different tones and volumes (e.g., questioning, annoyed, etc.): "I am the One with the horn" "Are you the One?" "I am a gift maybe" "Are you listening?" "You must strive, yes You must struggle" "Are you struggling?" "Oh Just Think of it" "Oh yes" "Maybe You just don't feel for it to night Oh, It's a pity isn't it

After all we've been through." The work was commissioned by The Swedish Concert Institute and premiered by Sören Hermansson. It is divided into five sections.

From the first note, chaotic, atonal horn sounds heavily make up the first section of the fixed media. After the first line of the poem is spoken, the solo horn adds to the chaos by imitating the opening glissando from the fixed media of a minor ninth. The entire work is in 4/4, but consistent meter is never felt at any point. The soloist's line contains a huge variety of complicated rhythms that contain frequent large leaps around the range of the instrument. In measure 10, the first $e^{\flat'''}$ of many appears, and due to its extreme range, Samuelsson indicates that it may be played down an octave. For the most part, the poem is spoken during the horn's rests, but sometimes it is heard while the horn is playing, such as in measure 14. After "Are you listening?" in measure 17, the horn and horn sounds on the fixed media continue playing manic, virtuosic lines until the beginning of the second section.

Following a pause, the second portion opens with quieter horn tremolos and string instrument tremolo-like "wave sounds", as well as "flidder" noises. The solo line is somewhat less active in this section and plays frequent tremolos. In the fixed media, the voice speaks in a lower, more intimate tone of voice, which also includes some electronic alteration. The hornist is also instructed to "gesture to electronic part/CD." While the lines of the poem say different things, the horn writing within the section does not seem to change, other than resting during "Maybe You just don't feel for it to night Oh, It's a pity isn't it After all we've been through." Physical gestures to the electronics continue amid a line that increases in activity, though not quite to the level of the beginning.

The transition into the third section is made through the re-introduction of aggressive, flutter tongued horn sounds in the fixed media. This section is best defined by what sounds like a fight between male and female voices in the poem, comprising iterations of the previous spoken lines, though now in shouts. While the material in the solo part is not strictly repeated from the beginning, it is stylistically similar. The transition into the next section includes a passage in the horn marked “important together with text” on “After all we’ve been through” in the poem.

Rich, non-functional brass chords comprise the dominant accompaniment for the fourth section. The horn melodies in this passage are much slower moving, though still angular, with a mixture of stopped and open notes. The poem is whispered.

The final section starts with the female voice heard as though calling from a distance. The horn writing in this passage is fragmented and played at a variety of dynamics. As the section goes on, a quiet version of the opening fixed media horn texture reprises as a coda. The horn line is slow moving like the fourth section as the voice repeats sensual “Ooh!”s at a whisper volume (example 43). At the final moment of the piece, the voice speaks “Listen!”

Title: *Tonus*

Composer: William R. Shannon (b. 1952)

Publisher: IMSLP.org

Dates: written 1978

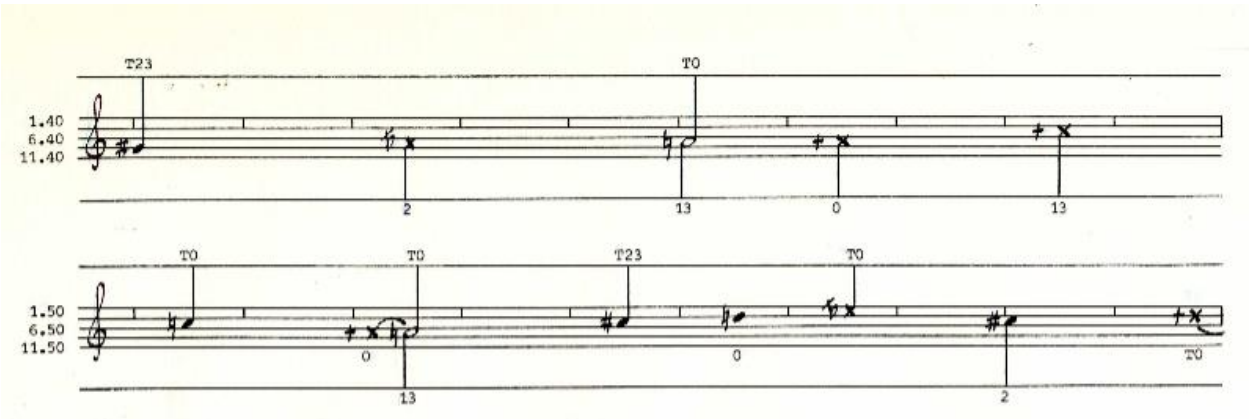
Format of Horn Part: chronometric part

Duration: 15'30"

Difficulty Level: II Talented high school student

Extended Techniques: quarter tones resulting from alternate fingerings

Range: A-f"



Example 44: 1'40"-2'00", stemless note in the middle of the second line

Notes: The primary purpose of the piece is to explore the natural harmonics of the horn by specifying the fingering to be used for every note of the piece. Shannon indicates with appropriate accidentals and alternate noteheads when the fingerings he has specified are especially out-of-tune harmonics. The notes in the horn line are relatively slow-moving, with the fastest notes being grace notes preceding quarter notes. The notes chosen do not have an obvious pattern in their relationships to the notes around them,

other than that repeated pitches always use different fingerings. When notes are occasionally repeated, the alternate fingerings create differences in timbre.

The horn part is notated such that the part is read three times. On the first playthrough, the hornist only reads the notes with upward facing stems. Upward and downward stems are both played on the second playthrough, and only downward ones are played on the final playthrough. Some notes are marked with both upward and downward stems; these are played on all portions of the piece. Other notes do not have stems (example 44), and the performer is given discretion to perform or not perform the unstemmed notes. All note lengths, articulations, and dynamics are also left to the performer's discretion, as well as whether or not to use mutes or other effects.

Tonus's fixed media consists of a low drone that oscillates slowly and creates subtle wave effects. The intervals never feel completely solid, as they flow between the right and left channels. At 2'37", a couple new, higher drones emerge to create a more complex texture using non-metric repeated entrances. While the drone is quite long, the horn part has a fair amount of repetition due to the format of the part, but over the long duration of the work, that repetition may not be perceived by the audience. On the second playthrough, 5'00", a new mid-range drone is added that moves higher and lower and creates gentle dissonances. This texture meshes with the more active quality of the horn part during this section that results from the inclusion of all stemmed notes. Occasionally, the texture thins out slightly, but this effect is created gradually, and it is not very noticeable. The final playthrough of the horn part begins with a smoother texture in the fixed media, by reducing the rumbling that was previously heard.

This work has a meditative quality, and as a pedagogical tool, it could serve a performer as an exercise for accuracy and familiarity with alternate fingerings. The amount of creativity left to the performer is also a welcome quality.

Title: *Deep*

Composer: Alex Shapiro (b. 1962), United States

Publisher: Activist Music

Dates: written 2013

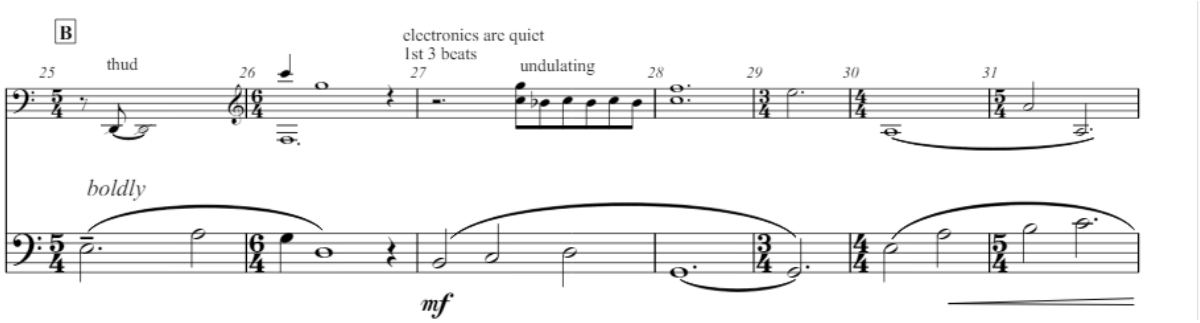
Format of Horn Part: measured score with horn below fixed media

Duration: 7'30"

Difficulty Level: II Talented high school student

Extended Techniques: none

Range: G-c"



Example 45: mm 25-31, melodic motif in horn part

Notes: *Deep* was originally written as a piece for contrabassoon and tape, but it has also been adapted for contrabass clarinet, bassoon, tuba, alto flute, six-string electric cello, and horn. Unsurprisingly, given the other versions, this piece would be well-classified as a low horn work, as it does not go above the c". The program notes state that *Deep* was inspired by the composer's spiritual experiences while swimming in the sea in Belize and discovering the wonders beneath the surface of the water.

After over a minute of quiet fixed media, the horn's first entrance is on an A. The fixed media at the beginning (and overall) primarily consists of sustained notes played by low strings and subdued brass instruments. There are also frequent percussion effects, and synthesized sounds, as well as slow breathing sounds, which, perhaps intentionally, sound similar to tides.

Harmonically, it is modal, primarily Dorian. A recurring motif throughout the piece is E-A-G-D (example 45), although the rhythms used for these notes are not a strictly motivic element. Both the hornist and the fixed media play this material, and it is prominent when played. Much of the horn part comprises sustained low notes and slow-moving melodic phrases. The most active part for the horn occurs briefly at measures 65-67. Soon after that passage, the climax of the work occurs in measure 70, which is marked "with nobility." This moment coincides with the highest note that the horn plays, c". Up until this point, the horn had been gradually moving higher and higher from the starting A. After the climax, the piece returns to the lower portion of the horn's range, until it ends the horn part on the same note as the start. The final direction given for the horn part states, of a decrescendo, "to nothing, and everything."

Provided a horn player is comfortable making entrances in the lowest range of the horn, the biggest challenge is creating musically convincing and technically consistent crescendi and decrescendi. At the end of measures 19 and 24, breath marks are given to help with the challenge of sustaining pitches in this range. One helpful feature of this piece is the frequent cue descriptions.

Title: *Fantasy for Horn and Tape*

Composer: Kurt Stallmann (b. 1964), United States

Publisher: RM Williams Publishing

Dates: written 1999

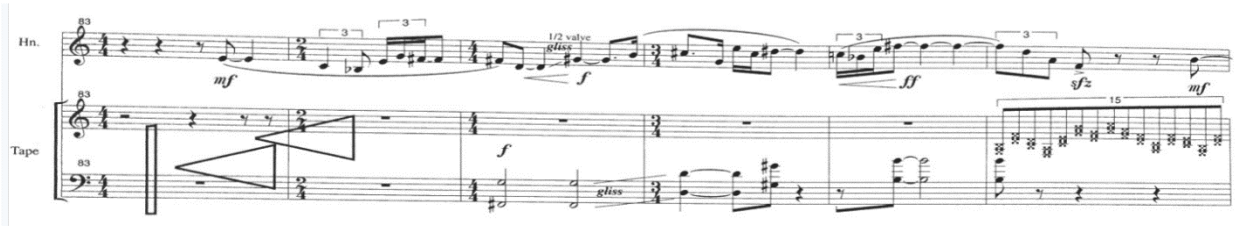
Format of Horn Part: measured score

Duration: 5'30"

Difficulty Level: V Virtuoso

Extended Techniques: half valve

Range: F-c'''



Example 46: mm 83-88, frequent meter changes

Notes: This work was written for horn soloist Paul Basler. Stallmann wrote in the program notes, "As a child, I often listened to the sound of my brother practicing his horn in the next room as I fell asleep, The infusion of its timbre into dream imagery inspired the title of this work." The atonal and non-sequitur gestures of the piece are indeed dream-like.

The piece does not follow any particular form, and there are no distinctively recurring motifs in the horn or accompaniment. Chords are non-functional, and melodies are atonal. Meter changes fairly often, but there is never a discernible sense of pulse

(example 46). The most interesting facets of this work are the textures and melodic gestures. One element that Stallmann uses to affect the texture is stereo effects. For instance, in measure 19, the two fast gestures are heard in the right and left channel, respectively. This has the effect of building the tension in that measure more than a monophonic passage would.

Throughout the work, the horn and fixed media have an abstract dialogue. For example, in measure 21-22, the horn plays a quintuplet with ties, the fixed media plays a quintuplet with a rest, and the horn plays a quintuplet with a rest and a tie. In each of these gestures, the exact contours, harmonies, and rhythms are different, but the aesthetic is similar between them. Another example of the quirky interaction comes in measure 30 when the fixed media holds a soft whole tone cluster while the horn plays a stopped, embellished melody.

Like many other pieces in this medium, *Fantasy* presents the challenge of soft motives in the accompaniment being difficult for the performer to hear. The sounds are derived from a variety of sources including string instruments, piano, organ, brass instruments, and synthesized noises. Because there is not an underlying sense of rhythm, lining up the horn part with the accompaniment can be difficult. However, when the horn does have unaccompanied solos, the fixed media has entrances during the hornist's long notes, which make it possible to accommodate for inconsistent perceptions of time.

Another important consideration for the performer is convincingly playing contrasts. Stallman wrote sudden and dramatic articulation and dynamic changes. In the absence of recognizable melodies, it is imperative that the performer exaggerate these

elements as much as possible. The composer is especially explicit in directions for articulations, with a majority of notes having two markings applied to them. Embellishments, such as grace notes, are demonstrated in the accompaniment, and the hornist should imitate their effortless character.

Title: *Nebadon*

Composer: Karlheinz Stockhausen (1928-2007), Germany

Publisher: Stockhausen-Verlag

Dates: written 2007, premiered May 8-9 2010.

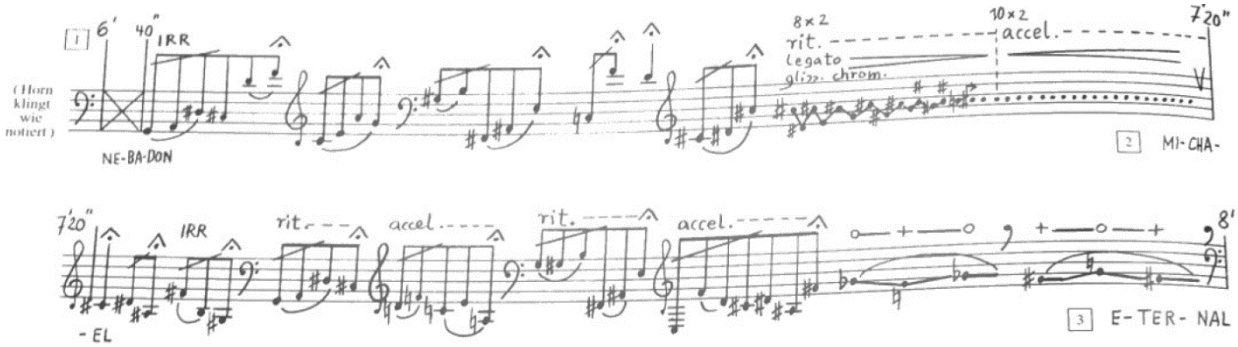
Format of Horn Part: chronometric part

Duration: 22'

Difficulty Level: IV Graduate performance major

Extended Techniques: stopped horn, mute, tremolo, glissandi, pitch bends, staging, timbre trill, flutter tongue, rapid tonguing

Range: b-b"



Example 47: 6'40"-8'00", improvised rhythms for horn

Notes: *Nebadon* is part of a larger compositional cycle called *Klang*, which is based on the 24 hours of the day, and *Nebadon* represents the seventeenth hour. The thirteenth hour of *Klang* is a purely electronic work called, *Cosmic Pulses*. That piece is made up of 24 layers of sound, and *Nebadon*'s accompaniment comprises layers 15,14, and 13. Each piece in *Klang* numbered 14 through 21 uses a different set of three

consecutive layers from *Cosmic Pulses*. Stockhausen writes in the program notes, "'Cosmic Pulses' consists of 24 layers. 24 melodic loops, each of which has a different number of pitches between 1 and 24, rotate in 24 tempi and in 24 registers with a range of circa 7 octaves...each of the 24 layers has its own spatial motion among eight loudspeakers." *Nebadon* consists of 24 sections, and each one begins with a word or phrase sung or spoken by Kathinka Pasveer, who was Stockhausen's partner at the time of his death.

The basis for *Klang* is a mystical quasi-Christian document called *The Urantia Book*. In 1971, a mysterious man famously appeared after a concert and sold a copy of the book to Stockhausen, for whom the book became immensely important.[28] The book claims to unify philosophy, Christianity, and science. Nebadon is the name of the universe where Urantia (Earth) is located.[29] The phrases spoken for each of the sections of *Nebadon* are all related to the doctrines of *The Urantia Book*. For instance, a few of the English and German phrases are "Michael," "zehn Millionen bewohnte Welten" [ten million inhabited worlds], "local universe," and "creator son."

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[28] Matthew Guerrieri, "The cosmic legacy of Karlheinz Stockhausen," *Slate*, Dec. 21, 2007, http://www.slate.com/articles/news_and_politics/obit/2007/12/karlheinz_stockhausen.html.

[29] *The Urantia Book* (Chicago: Urantia Foundation, 1955), Paper 15 "The Seven Superuniverses," http://www.urantia.org/urantia-book-standardized/paper-15-seven-superuniverses.

Stockhausen gives the hornist specific instructions for the staging of the work; for example, it is to be played from memory and he gives the player many instructions for how to point the bell of the horn at different points throughout the piece. In addition, he states that the color associated with *Nebadon*'s position within *Klang* is HKS 10, which is a reddish orange, and Stockhausen suggests that the player could wear this color for the performance. The horn player is also instructed to wear a mute holder, in order to have a straight mute handy, without leaving it on the stage.

The work opens with three resonant, synthesized pitches in the fixed media that recur throughout the piece: concert F, c#, d#. Stockhausen states that the solo line begins at 6'40", but the horn actually enters at 0'47" in the fixed media track. This discrepancy reflects the fixed media material's position in *Cosmic Pulses*. Due to the freedom allowed for the soloist in the work, a stopwatch is neither necessary nor feasible for performance. After the sung declamation of "Nebadon" by Pasveer, the horn enters with an expansive line, in which the player may improvise irregular rhythms as desired onto the slashed eighth notes (example 47). The majority of the horn writing in the piece is made up of these free phrases that cover the range of the instrument. Chromatic noodles are also common and notated as chromatic glissandi. Just before the spoken "creator son" at 8'40" the horn plays tremolos over a wide interval. Christine Chapman, the hornist who premiered the work, does an excellent job in the included reference recording of playing these passages with graceful, yet playable speed.

Starting at 10', some notes and passages are marked with a duration in seconds. At 11'16", the soloist is asked to create effects with pulling the mute in and out of the horn.

This is a challenging task to do while standing, and the author suggests gripping one end of the mute strap with the right index finger and thumb for these passages. From 15'00" to 16'40", the player is given the freedom to play two high passages as many or as few times as desired, within the allotted time. Outside of the beginning and end of the piece, the fixed media texture remains active and fairly thick. After "Maria" is spoken, the horn reprises a version of its opening line, albeit with different note beamings. At the end of the horn's music, g#"s are alternated with the syllables of "Heiliges Nebadon" [Holy Nebadon], with the last one occurring at the same time as "-DON." Other than this spot, the individual syllables spoken in the fixed media do not interact with the horn's line.

Stockhausen studied with Messiaen, and thus, parallels between *Nebadon* and *Appel Interstellaire* are uncanny. Both works are solo horn pieces in the context of grand compositional cycles for larger orchestration. Messiaen's work for solo horn was inspired biblical quotes, which, like the inspiration for Stockhausen's piece, mention stars. Both pieces include extended techniques and are challenging works to perform.

Title: *Om*

Composer: Leilei Tian (b. 1971), China

Publisher: Babelscores

Dates: written 2012

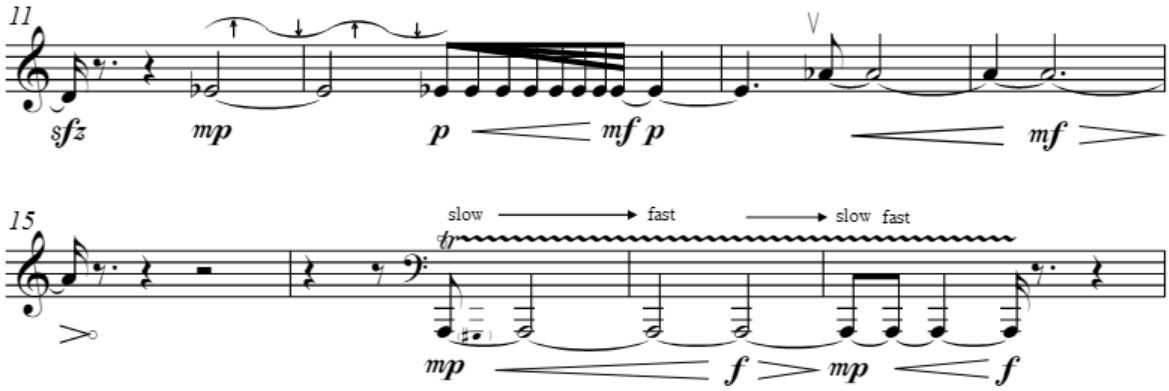
Format of Horn Part: metered part in concert pitch

Duration: 10'30"

Difficulty Level: IV Graduate performance major

Extended Techniques: vibrato, air effects, flutter tongue, stopped horn, glissandi

Range: E-b"



Example 48: mm 11-18, pitch bends and variable speed trills

Notes: Soloist Sören Hermansson commissioned this work. The title of the piece comes from the simple, extended chant that is heard sung by a low, male voice at the beginning of the piece. While the meaning of this chant means different things in different cultures, the first known reference to it was found in sacred Hindi texts. It states, “Om is the universe...The past, the present, and the future, all that was, all that will be is

om. Likewise, all else that may exist beyond the bounds of time, that too is om."[30] The slow rate of changes in this piece, along with the ritualistic quality appear to make it a far more spiritual work than many other pieces heard in this medium.

One challenge presented by this piece is the absence of cues. The tempo is only quarter note = 46, so getting ahead of or behind the fixed media is easy. During the first section of the piece, the dominant textures in the fixed media are recordings of extremely low horn tones played fluttered and/or trilled, the rough, low male chant, and a pure, female voice that opens and closes her mouth on the Om chant. A recorded horn is also used to imitate the female voice with pure tones, as an analog to the low sounds imitating the male voice. The solo horn plays a relatively static line that consists of notes in different registers that frequently bend pitch up and down or have trills that vary in speed (example 48). There is no tonal relation between the horn pitches and the drones in the fixed media, and sustained dissonances are common.

This section grows more agitated through notes of shorter length in all of the fixed media instruments and the horn line, along with the entrance of miscellaneous percussion effects. The passage transforms into a rhythmic passage that contains an assortment of wild, ritualistic drum sounds in the fixed media. In the solo part, rapid repeated notes alternate between stopped and open. This effect is also echoed several times in the

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[30] Valerie Reiss, "The Meaning of Om," *Huffington Post*, Nov. 2, 2013, http://www.huffingtonpost.com/kripalu/meaning-of-om_b_4177447.html.

recorded horn in the fixed media. An exotic flute plays energetic trills as the passage progresses, while the horn continues to play rapid notes that transform into tense chromatic waves. These build until a grand pause in measure 87. At this point, the textures from the first section re-emerge, with the nebulous addition of chime, vibraphone, and gong sounds to conclude the work.

Title: *Minotaur*

Composer: Ewa Trębacz, Poland

Publisher: self-published at ewatrebacz.com

Dates: written 2005

Format of Horn Part: unmetered part

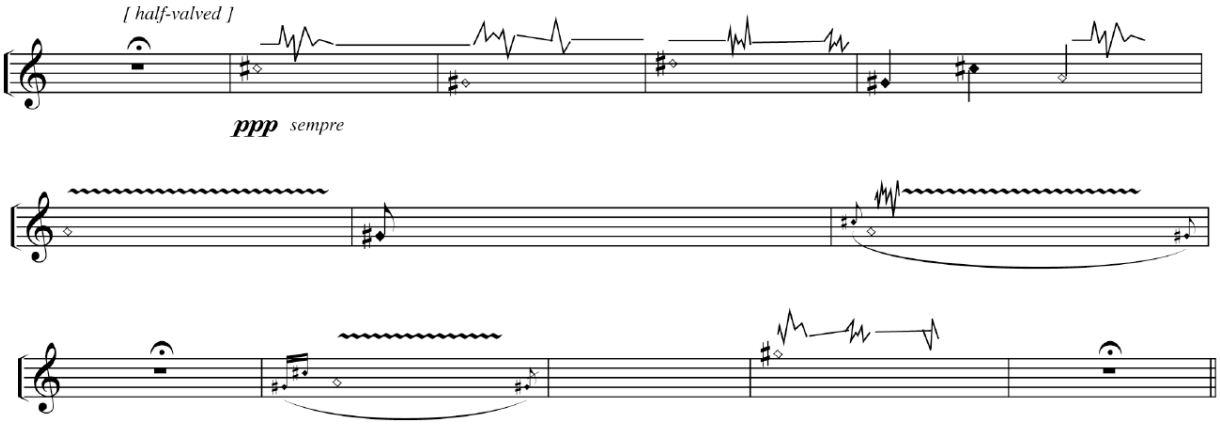
Duration: 14'30"

Difficulty Level: IV Graduate performance major

Extended Techniques: staging, stopped horn, vibrato, glissandi, flutter tongue, right hand trill, half valve, quarter tones

Range: g-b"

Track 8 - 9 [continuous transition]



Example 49: page 7, half-valve effects

Notes: Trębacz writes in the program notes that the inspiration for the piece came from the Greek myth of the Minotaur, a monstrous creature who was trapped inside a labyrinth where, “the only clues to its location are the sounds of its cry echoing from all

around." The sounds for the fixed media were created when Trębacz and hornist Josiah Boothby visited various acoustic environments in Washington state and recorded Boothby's short improvisations through surround sound microphones. As a result, the recorded horn is echoey and the sound characteristics changes throughout the work. To preserve the surround sound effect, four or six speakers are needed in an array, each with their own channels. In keeping with the subject matter, the soloist is instructed to freely move around the stage, as well as outside of the stage. Trębacz considers this piece to be a directed improvisation, and the solo hornist is welcome to deviate from the written score, but encouraged to respond closely to the sounds on the fixed media. For practice purposes, Trębacz has ten stereo tracks available on her website.

The work is arranged into ten sections, with the final one sharing the same material as the fifth one, save for an extra, short passage at the conclusion of the piece. The beginning is marked "play like 'echo' of tape part." In the first track, the recorded horn plays a series of bovine-like half-valve wails. Although the piece is measured with four beats notated in each measure, Trębacz did not include a time signature. Instead of meticulously counting each beat, the performer should listen to the fixed media and freely respond to what is heard. In the first section, the performer plays embellishments of g' using grace notes, right hand trills, flutter tongue, and varying dynamic levels. In the second section, the fixed media layers several recordings of Boothby playing aggressively with a large amount of stopped horn, creating the illusion of many horns, in the way that an echo in a labyrinth would do. Meanwhile, the soloist plays an atonal line

that intersperses quick outbursts into fairly slow-moving lines. In the second measure, the marking of “dirty sound” appears, which is seen throughout the work.

In the third section, the horn line in both the solo part and the fixed media is mainly embellishments of a#', b', and c#'. Partway through this section, simple drum-like percussion is introduced, playing occasional quarter note pulses. Both the recorded and live horns play chaotically with a variety of strong articulations. During the fourth section, the solo horn is tacet. The fixed media’s solo is similar to the opening wails, but they appear to be heard from far away. Waves of low, wind-like noises are also played. These windy sounds continue into the fifth section, as both the recorded and solo horns play agitated lines, focusing around c'. Around 35" into the section, a woodblock sound and half-valve oscillations over a narrow range enter on top of the horn sounds, and the half-valve recording gives the effect of an exotic flute in a ritual.

The sixth passage includes the instruction for the soloist to begin playing 25 seconds into the track. Before the soloist enters, a wild duet is heard between the aggressive horn sounds and the flute-like warblings of the half-valve horn. The solo line starts with an imitation of the half-valve lines, and then changes to stopped horn for the last three measures of the section. Section seven begins with two 8th-note triplet-based sections on a#' with the instruction to “repeat varying tempo and dynamics.” With the section lasting for almost two minutes, the soloist can repeat the passage many times before needing to continue onto the rest of the section’s melodic material. While this is happening, the fixed media plays slow oscillations between stopped and open that create

frequent minor seconds between the layers. Toward the end of the passage, the soloist plays rapid flourishes of six and seven notes.

In the eighth section, the slow wails from the beginning are quietly heard in conjunction with the flute-like half-valve lines. This part of the piece is the most reserved, with no dynamics louder than *mp*. In the second half, the soloist plays half-valve warblings (example 49). The soloist is instructed to keep playing these into the silence between the eighth and ninth tracks.

Like the opening section, the marking on the solo part is to be played "like 'echo' of fixed media part." Fifths of varying rhythms make up the basis for the first half of this section, and both the fixed media and soloist play the flute-like line at the end. Following this section, track five is repeated with the same solo material, but at the end the soloist is instructed to play "irregular non-coordinated rapid changes in low register; work into and out of a stopped position; simultaneously tongue as fast as possible; keep walking around while playing."

Title: *Fantasie for Horns II*

Composer: Hildegard Westerkamp (b. 1946), Germany

Publisher: Canadian Arts Centre

Dates: written 1979

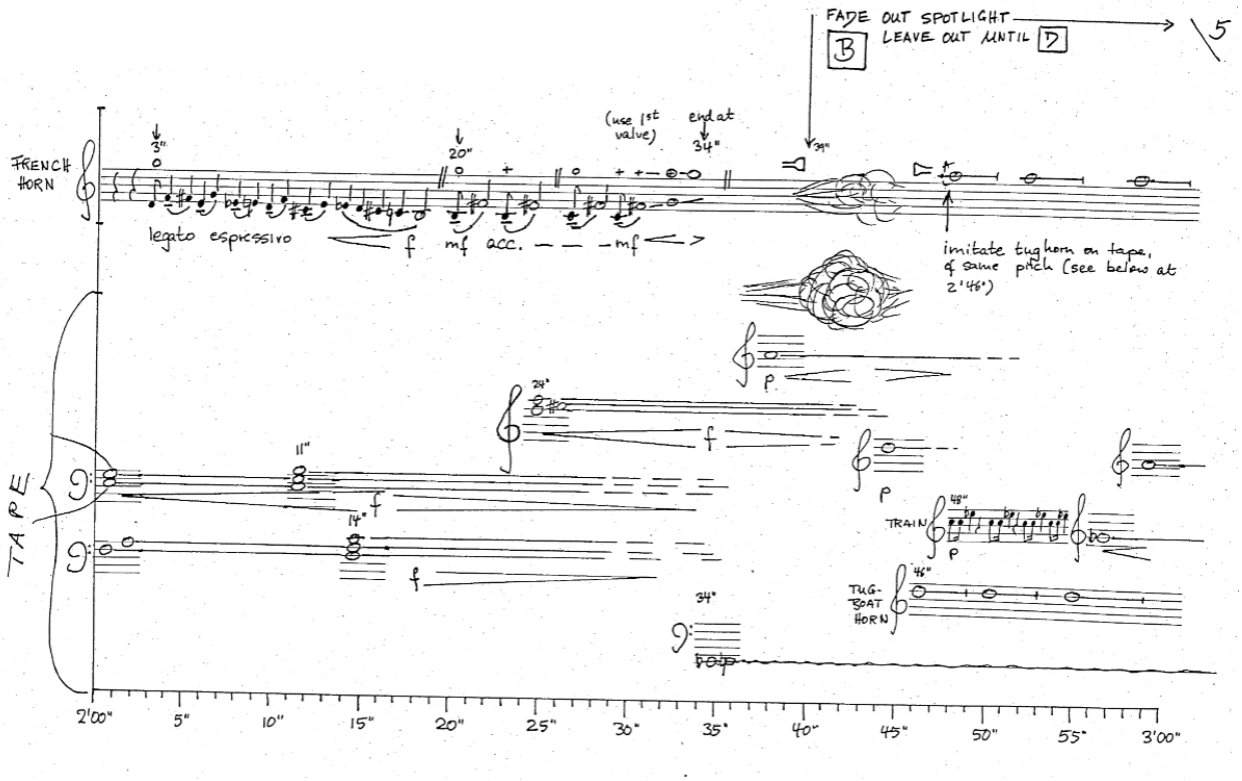
Format of Horn Part: chronometric score

Duration: 13'

Difficulty Level: II Talented high school student

Extended Techniques: staging, pitch bend, blow air through mouthpiece, glissandi, stopped horn

Range: a-a"



Example 50: 2'00”-3'00”, horn imitation of tughorn

Notes: At first glance, the title “Fantasie for Horns II” appears to be a typo for a piece that only includes one hornist. However, the title actually comes from the accompaniment, which is primarily made from the sounds of train, fog, and car horns. It was originally a piece for tape alone, *Fantasie for Horns I*, but Westerkamp felt that the addition of a live horn part was a fitting choice. The score is chronometric, and the stopwatch starts during a nondescript spot after the fixed media has begun. This poses some difficulty for lining the cues up, especially since the fixed media starts almost inaudibly, but the author discovered, after some experimentation, that 0'00" on the score corresponds to 1'16" on the fixed media file. Thus two stopwatches for the performer may be needed to play this piece: one to get to 1'16" and another to fit with the chronometric markings.

For players who are not accustomed to playing unmeasured music, following the stopwatch takes a little adjustment, and starting the stopwatch in the right spot takes some coordination. One way to handle this is to have the player, rather than a tech, start the fixed media and first stopwatch at the same time. He or she can then carry the stopwatch onto the dark stage and start the second one at 1'16". However, the staging for this piece also requires at least one technician to assist with the spotlight controls.

When the spotlight fades up on the soloist and the horn enters, the part does not provide any major challenges. The simple melodies are generally written within a comfortable range and are not technically demanding. Jumps of fifths or sixths are common in the part, which evoke natural horn calls. The piece does not have a tonal

center, but the harmonies are mostly consonant. From rehearsal A until rehearsal B, the soloist plays embellished calls with an improvised character.

At rehearsal B, the soloist imitates the pitch and timbre of the tug horn by playing repeated a"s (example 50). Beneath these, train horns are heard over the sound of a low drone. Some water sounds begin, which segue into rehearsal C. At this point, a dim spotlight shines on a natural horn sitting on the stage while the player is off stage, which is an interesting theatrical choice. While offstage, the soloist plays calls that would be playable on a natural horn in A, which are similar to the opening calls. The background of water sounds is occasionally joined by the sound of distant car horns.

The sound of water continues into rehearsal D, where the soloist returns to the stage, and complex, relaxed drones enter in the fixed media. At 8'42", fog horns enter, and the soloist creates a duet with them by playing stopped versions of the tug horn calls from rehearsal B. Although the fog horns have easily discernible pitches, the soloist never imitates them, and the tug horn is the only sound in the work that directly interacts with the horn. The drone and soloist fade out, and the work quietly ends.

Title: *Fluxus X*

Composer: Ramon Zupko (b. 1932), United States

Publisher: unpublished

Dates: written 1993

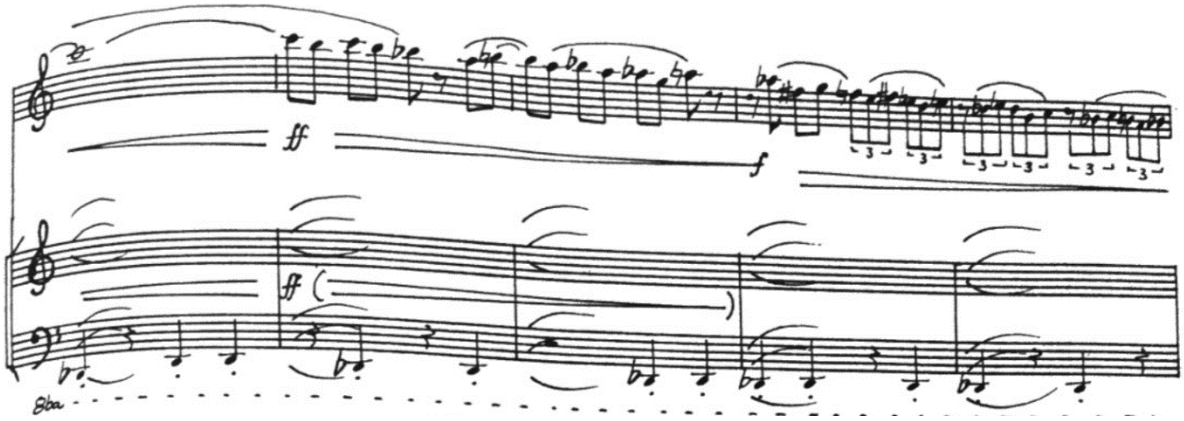
Format of Horn Part: measured score

Duration: 10'

Difficulty Level: V Virtuoso

Extended Techniques: stopped horn

Range: G-c'''



Example 51: page 13, high range writing

Notes: Fluxus is the Latin word for electricity, and this work is the tenth piece in series of *Fluxus* pieces. All of the sounds in this work were created from digitally sampled and processed horn recordings. Much of the accompaniment sounds like horns, but even the drastically altered sounds still sound homogenous with the rest of the accompaniment, thus the fixed media has a consistent character.

The horn creates a heavily syncopated and conversation-like dialogue with the fixed media by playing related motives that respond to each other and interrupt, at times. Minor sevenths, and to a lesser degree major ninths, are a common interval. The horn part, though angular, is quite lyrical. The piece covers the entire range of the horn, but it favors the upper range (example 51). At several points during the work, the horn holds notes above the staff for multiple measures.

The form is roughly ABA, with a fast section at the beginning with an energetic sixteenth note texture accompaniment, a slower section in the middle where the horn plays recitative-like solos, and a fast section at the end that is related to the opening ideas.

At the beginning, the harmony is best described as F Phrygian. When the harmony changes, it still stays relatively modal. As the piece transitions into the middle section, the chords become wider spaced and harmonically complex. The horn plays active solos over these held chords, and the harmonic changes during the horn's long notes allow for a fair amount of rubato because the hornist can shorten or lengthen the long notes by reacting to the entrances in the fixed media. During the middle section, the horn plays several stopped passages – the one extended technique employed in this work. After holding out a b♭" for six measures at the end, the last note drops down to a c"; the dropping of the seventh decreases the intensity of the moment and gives the impression that Zupko wanted a c"' but realized that was impractical to hold it for so long.

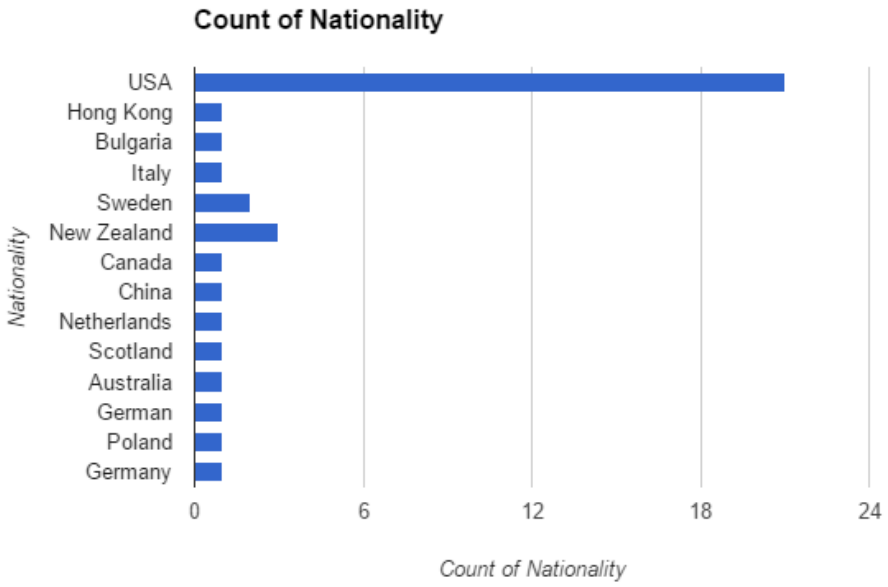
Despite the modern musical language, the lyricism and interesting texture of this piece makes it accessible to audiences. It is a challenging work to perform in terms of range and agility, but it is idiomatic for the horn.

Chapter 3: Conclusions

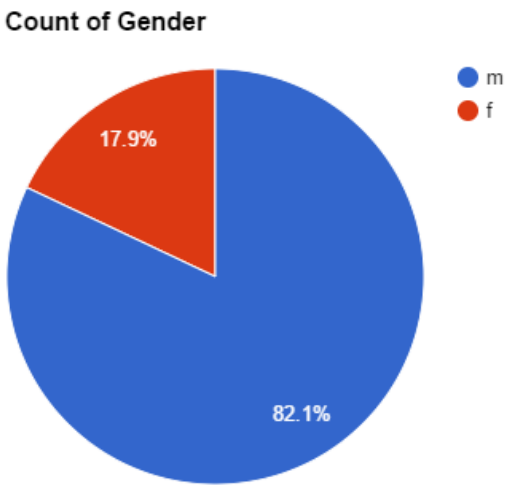
Here are a few of the author's general observations from the course of this investigation:

- Countless libraries hold copies only of the scores for these works, but without access to the fixed media in some form, performers cannot study or perform these works. The author had to contact many composers directly to obtain fixed media files after borrowing the scores from libraries. The appendix is a listing of works borrowed from libraries for which accompaniment could not be obtained.
- Extended techniques are common, with most pieces having more than one
- Many pieces for horn and fixed media have versions for fixed media and other instruments
- Because these works are not generally well-known, composers needed to be contacted directly to obtain many. A number of these individuals had trouble finding the fixed media files within their own libraries.
- Several pieces were found (and subsequently excluded from the study) that require the performer to create his or her own fixed media recording. These works are Larry Polansky's *Horn*, John Maxwell Geddes's *Coronach*, and George Hitt's *Rennaisance Man – Burgher Shoes*
- The oldest identified work is John Rimmer's *Composition I*, which was written in 1968, and the newest one is Nick Norton's *Gone to the Other Shore*, which was written in 2016

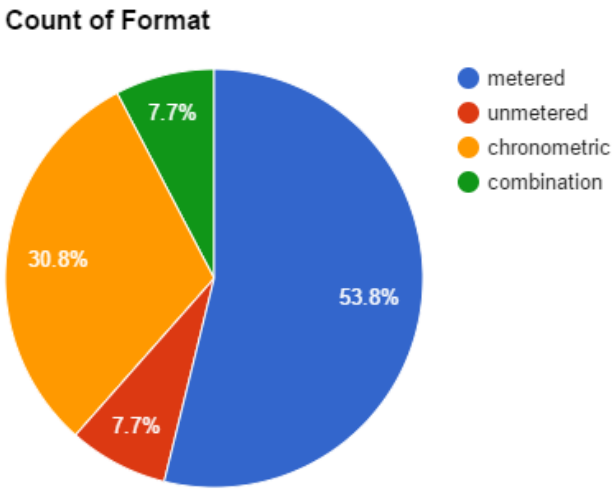
- The shortest work is James Naigus's *Soundings* at 3'23" and the longest is Karlheinz Stockhausen's *Nebadon* at 22'30"
- Horn and fixed media is overwhelmingly an American medium:



- However, American *women* are far underrepresented (one work out of 21 American pieces, compared to six out of 18 non-American pieces). Here is the overall breakdown of works written by women:



- Because twentieth and twenty-first century composers are free to notate music in different ways, they have chosen to notate works for horn and fixed media in a variety of ways:



- Metered is the most common format, followed by chronometric, then non-chronometric unmetered, which is tied with a combination of notational types

- Chronometric music presents an interesting trade-off: it makes music that must be synced to a fixed media file easier to follow. However, the notation has limited capacity for conveying the desired speed of pulse

The author's personal favorite pieces are (in alphabetical order):

Phillip Bimstein's *Half Moon at Checkerboard Mesa*, Howard Buss's *Alien Loop de Loops*, Michael Kallstrom's *Brothers in Arms*, Christien Ledroit's *Metropolis,* Matthew Nicholl's *Coming Home*, Nick Norton's *Gone to the Other Shore*, Alex Shapiro's *Deep,* Ramon Zupko's *Fluxus X*.

Appendix

Pieces for which the fixed media could not be obtained:

Richard Bromley *Halos* (unpublished, held by the University of Colorado, Boulder)

Timothy Crowley *Syncorism* (Jomar Press)

David Warner Hutchinson *Hornpiece I* (Seesaw Music Corp.)

Gerald Lefkoff *Music for Horn and Speakers* (held by the Library of Congress)

Salvatore Macchia *Agreements* (unpublished)

Joseph Ott *Solosforhorn* (Claude Benny Press)

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